



United States
Department of
Agriculture



Natural
Resources
Conservation
Service

In cooperation with
United States
Department of
Agriculture, Forest
Service; and the
University of California
Agricultural Experiment
Station

Soil Survey of Toiyabe National Forest Area, California



How To Use This Soil Survey

This survey is divided into two parts. Part I includes general information about the survey area; descriptions of the detailed soil map units and soil series in the area; descriptions on use and interpretations of soils, and various tables. Part II includes the maps.

The **detailed soil map units** follow the general information about the survey area. These map units can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**, note the number of the map sheet, and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Index to Map Units** in Part I of this survey, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Summary of Tables** shows which table has data on a specific land use for each detailed soil map unit. See **Contents** for sections of this publication that may address your specific needs.

A **U.S. General Soil Map (STATSGO)** is available for this survey area. This database consists of a soils map at a scale of 1 to 250,000 and descriptions of groups of associated soils. It replaces the general soil map published in older soil surveys. The map and the database can be used for multi-county planning, and map output can be tailored for a specific use. More information about the U.S General Soil Map for this survey area, or any portion of Nevada, is available at the local office of the Natural Resources Conservation Service, and on the internet at <http://soildatamart.nrcs.usda.gov/USDGSM.aspx>.

Some standards or values may change as more information is collected and analyzed. Thus, as older published interpretive information becomes outdated, new interpretive data must be generated and tailored to local conditions. This information is added to the Soil Data Mart and Web Soil Survey as needed. See the NRCS soils home page (<http://soils.usda.gov/>) for links to these applications and other information about soils and soil surveys.

National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 2005. Soil names and descriptions were approved in 2006. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2006. This survey was made cooperatively by the Natural Resources Conservation Service and Forest Service and the University of California Agriculture Experiment Station. The survey is part of the technical assistance furnished to the Alpine and Mono County Resource Conservation Districts.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

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Cover: Barney Lake, in the Hoover Wilderness. The surrounding steep mountain sideslopes are representative of map unit 111-Whittell-Jobsis-Rock outcrop complex, 30 to 75 percent slopes. These high elevation mountains exhibit striking evidence of their glacial history.

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Foreword

This soil survey has been developed by the Natural Resources Conservation Service, America's Private Lands Conservation Agency. The soil survey contains information that affects land use planning and other aspects of natural resources conservation in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

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State Conservationist
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Location of Toiyabe National Forest Area, California

Soil Survey of Toiyabe National Forest Area, California

By Edward W. Blake, Natural Resources Conservation Service

Field work by Edward W. Blake, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
United States Department of Agriculture, Forest Service
and the University of California Agricultural Experiment Station

General Nature of the Survey Area

This section gives general information about the survey area. It briefly discusses history; industries, transportation, and recreation; physiography, drainage, and geology; and climate.

The Toiyabe National Forest Area is in the northeast part of California (see map on facing page). It has an area of 663,783 acres or 1,037 square miles, occurring in Alpine and Mono Counties.

The Survey is bounded on the north by the Lake Tahoe Basin, on the east by Douglas, Lyon, and Mineral Counties, Nevada, on the south by the Inyo National Forest and Yosemite National Park and on the west by the Stanislaus and Eldorado National Forests.

The survey area consists principally of land administered by the U.S. Forest Service, with small private in-holdings. This area is entirely within the Carson and Walker River watersheds. Included within the survey area are portions of the Carson-Iceberg, Hoover and Mokelumne wilderness areas.

History

The first inhabitants of this area were the native Paiute and Washoe people. Jedediah Smith was the first European to visit the area in 1827, followed by a party led by John C. Fremont that explored the area in 1844. However, it was the search for gold and silver that brought the first permanent European settlers to the area

in the 1850's. In 1858, the town of Silver Mountain City was established after silver was discovered near Silver Creek, in what is now Alpine County. Nearby towns of Monitor and Mount Bullion followed as mining activity expanded. Alpine County was created in 1864, and in 1875 Markleeville became the County seat. Likewise, the discovery of gold near Bodie, in Mono County, in 1859 brought an influx of Europeans to what is now Mono County. During the 1860's gold was also discovered near Masonic. In 1861 Mono County was formed, and Bridgeport became the County seat.

Industry, Transportation and Recreation

The Toiyabe National Forest Area, California is an area of sparse population and limited development. The primary industries are related to tourism, livestock production and government. The scenic beauty of this area makes it a popular destination for tourists. Summer livestock grazing of cattle or sheep occurs over most of the area. The U.S. Marine Corps operates the Mountain Warfare Training Center within the survey area, which provides jobs and contributes to the local economy.

The major transportation routes within the area are U.S. Highway 395, which provides the main north-south access to the area. There are four roads providing the main east-west access to the area, including State Highways 108 over Sonora Pass, 89 over Monitor Pass, 4 over Ebbetts Pass and 88 over Carson Pass.

This area is popular with people interested in outdoor recreation, with summer activities including fishing, hiking, camping, biking and off road vehicle use being enjoyed. Winter activities include snowmobiling, snowshoeing and skiing.

Physiography, Drainage and Geology

This area is on the east slope of the Sierra Nevada Mountains and on the western edge of the Great Basin. The area is typified by mountain ranges separated by externally drained valleys. The mountains are drained by numerous streams that converge with the Carson River in Alpine County or the Walker River in Mono County. These rivers transport their water through the survey area and on to Nevada. The most prominent water bodies within the area include Bridgeport Reservoir, Twin Lakes and Virginia Lakes. Many small mountain lakes are also located throughout the area.

The survey area is dominated by mountains consisting mainly of Pliocene age volcanic rocks such as andesite, rhyolite and tuff breccia. Also of major extent are Mesozoic granitic rocks such as granodiorite and quartz monzonite. Of much lesser extent are areas of Pre-Cretaceous metasedimentary rocks such as schist and gneiss. Of local extent in valley areas are Quaternary glacial deposits and to a lesser extent Quaternary alluvial deposits.

Climate

The climate within the survey area is characterized by generally warm dry summers and cold moist winters. Most precipitation occurs as snow, with higher elevation areas receiving as much as 600 inches of snow per year. Large variations in average annual precipitation occur within the survey area, ranging from a low of about 10 inches at lower elevations east of Antelope Valley to over 50 inches at higher locations such as Ebbetts Pass and Leavitt Lake. Likewise, average annual air temperature and frost free period is strongly influenced by elevation and topography. Frost free periods range from about 100 days at lower elevations to less than 30 days at the highest elevations.

Table 1 gives data on temperature and precipitation within the survey area as recorded at Twin Lakes and Woodfords in the period 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

Based on the entire period of record (1948-2000) at Twin Lakes, in winter, the average temperature is 27.9 degrees F and the average daily minimum temperature is 16.8 degrees. The lowest temperature on record is -24

degrees, recorded February 12, 1949. In summer, the average temperature is 54.2 degrees and the average daily maximum temperature is 68 degrees. The highest recorded temperature is 95 degrees, recorded July 17, 1998.

Based on the entire period of record (1948-2000) at Woodfords, in winter, the average temperature is 34.4 degrees F. and the average daily minimum temperature is 22.1 degrees. The lowest temperature on record is -17 degrees, recorded February 5, 1989. In summer, the average temperature is 65.9 degrees and the average daily maximum temperature is 81.8 degrees. The highest recorded temperature is 98 degrees, recorded August 10, 1972.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually

change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for

laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show drainage, vegetative and geologic patterns, landforms and roads, all of which help in locating boundaries accurately.

Detailed Soil Map Units

The map units on the detailed maps in Part II of this publication represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the headings "Use and Management of the Soils" and "Soil Properties." A map unit delineation on the detailed soil maps represents an area dominated by one or more soils or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils or miscellaneous areas. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils and miscellaneous areas are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, are mapped without including areas of other taxonomic classes. Consequently, map units are made up of the soils or miscellaneous areas for which they are named and some "included" areas that belong to other taxonomic classes.

Most included soils have properties and behavioral characteristics similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, inclusions. They may or may not be mentioned in the map unit description. Other included soils and miscellaneous areas, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, inclusions. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The included areas of

contrasting soils or miscellaneous areas are mentioned in the map unit descriptions. A few included areas may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of included areas in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit. The principal hazards and limitations to be considered in planning for specific uses are identified in the tables and narrative.

Kinds of Map Units

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Some of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Rose Creek loam, 0 to 2 percent slopes is a phase of the Rose Creek series.

Some map units are made up of two or more major

soils or miscellaneous areas. These map units are complexes or associations. A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Lavaspring-Trespass complex, 0 to 4 percent slopes is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Canfire-Crispy-Rock outcrop association is an example.

This survey includes *miscellaneous* areas. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Acreage and Extent

Table 4, "Acreage and Proportionate Extent of the Soils", gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of Tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Headings and Introductory Phrases

In the map unit descriptions that follow, a semi-tabular format is used. In this format the major headings are centered in the column (for example, *Composition*). They identify the information grouped directly below them. Introducing each item of information under the centered heading is a term or phrase (for example, *Landform*) that identifies or describes the information. Many of the centered headings and introductory terms are self-explanatory; however, some of them need further explanation and are defined in the Glossary. Explanations of the headings and introductory phrases are provided in the following paragraphs, generally in the order in which they are used in the map unit descriptions.

Map Unit Setting is given for the entire map unit. The MLRA, or major land resource area, is listed first. The MLRA is a broad ecological area with characteristic climate, topography, vegetation, water resources, soils and land use (5). This section identifies the landscape in

which the map unit is located. The landscape positions given for the entire map unit generally are broader than those given for each component.

Composition is given for the components (soils or miscellaneous areas) identified in the name of the map unit as well as for the contrasting inclusions. Contrasting inclusions are inextensive components that differ in use and management from the soils or miscellaneous areas for which the map unit is named. As was explained earlier, inclusions can either be *similar* or *contrasting*. Note that in the *Composition* section a single percentage is provided for a named soil and its similar inclusions because their use and management are similar.

Component Description lists the characteristics of the major components. These include landform, parent material, typical vegetation, a brief profile description, slope, runoff, available water capacity, drainage class, and other important properties of the soil. Also provided are important interpretive groups including land capability classification and ecological site numbers.

Ecological Site is the assigned rangeland or grazed forest land ecological site that identifies a unique potential native plant community. The plant species and production typical of each rangeland ecological site are listed by map unit in Table 6, "Rangeland Ecological Sites, Productivity and Characteristic Vegetation". Additional information about managing these sites is provided under the heading "Rangeland and Forest Land Resource Management" in this publication. Further information also can be obtained from the local office of the Natural Resources Conservation Service.

Contrasting Inclusions lists additional information about the soils of minor extent in the map unit. The slope, landform, typical vegetation, and ecological site number are listed for each soil or miscellaneous area as appropriate.

Map Unit Descriptions

100—Lithnip-Hawkinspeak-Rock outcrop complex, 30 to 75 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 10,000

Precipitation: 35 to 45 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Lithnip extremely gravelly sandy loam, 30 to 75 percent slopes—40 percent

Hawkinspeak very gravelly sandy loam, warm, 30 to 50 percent slopes—30 percent
 Rock outcrop—15 percent
 Lostridge very gravelly coarse sandy loam, 15 to 50 percent slopes—5 percent
 Hawkinspeak very gravelly sandy loam, moist, 30 to 50 percent slopes—3 percent
 Typic Cryaquolls very gravelly sandy loam, 4 to 15 percent slopes—3 percent
 Hawkridge very stony sandy loam, 8 to 30 percent slopes—2 percent
 Aspocket gravelly sandy loam, 4 to 30 percent slopes—1 percent
 Chutes—1 percent

Component Description

Lithnip and similar soils

Landform: Mountains
 Slope: 30 to 75 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Indian ricegrass, western needlegrass, bluegrass, eriogonum, lupine, wild mint, goldenweed, mulesears wyethia

Typical profile:

Surface rock fragments: About 60 percent gravel, 1 percent stones
 Layer 1—0 to 2 inches; extremely gravelly sandy loam
 Layer 2—2 to 5 inches; very gravelly sandy loam
 Layer 3—5 to 15 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 4 to 10 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 0.3 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: R022AY012NV—Barren slope 20+ P.Z.

Component Description

Hawkinspeak and similar soils

Landform: Mountains
 Slope: 30 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 1 percent boulders, 3 percent stones, 5 percent cobbles, 45 percent gravel
 Layer 1—0 to 3 inches; very gravelly sandy loam
 Layer 2—3 to 9 inches; very gravelly sandy loam
 Layer 3—9 to 33 inches; very gravelly sandy clay loam
 Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R022AY021NV—South slope 30+ P.Z.

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Lostridge and similar soils

Composition: 0 to 5 percent

Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—California red fir,
 lodgepole pine Forest understory—mountain big
 sagebrush, currant, snowberry
 Ecological site: F022AY105NV

Hawkinspeak and similar soils

Composition: 0 to 3 percent
 Slope: 30 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, mountain
 brome, melic, other perennial forbs, mountain big
 sagebrush
 Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Typic Cryaquolls and similar soils

Composition: 0 to 3 percent
 Classification: Sandy-skeletal, mixed Typic Cryaquolls
 Slope: 4 to 15 percent
 Landform: Flood plains
 Typical vegetation: Sedge, slender wheatgrass,
 bluegrass, other perennial forbs, willow
 Ecological site: R022AY034NV—Moist willow

Hawkridge and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Shoulders of mountains
 Typical vegetation: Pine needlegrass, goldenweed, low
 sagebrush, prairie junegrass
 Ecological site: R022AY011NV—Mountain ridge 30+
 P.Z.

Aspocket and similar soils

Composition: 0 to 1 percent
 Slope: 4 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender
 wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Chutes

Composition: 0 to 1 percent
 Slope: 75 to 150 percent
 Landform: Avalanche chutes
 Ecological site: None

Management

For information about managing this map unit, see the
 following sections and associated tables in this
 publication:
 "Range" section

"Forest land" section
 "Engineering" and "Soil Properties" sections

101—Lithnip-Rock outcrop-Fishsnooze complex, 30 to 75 percent slopes

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 9,000 to 12,000
 Precipitation: 35 to 55 inches
 Air temperature: 36 to 39 degrees Fahrenheit
 Frost-free period: 15 to 60 days

Composition

Lithnip extremely gravelly sandy loam, moist, 30 to 75
 percent slopes—40 percent
 Rock outcrop—25 percent
 Fishsnooze very gravelly sandy loam, cool, 30 to 50
 percent slopes—20 percent
 Lithnip extremely gravelly sandy loam, 30 to 75 percent
 slopes—3 percent
 Hawkinspeak very gravelly sandy loam, 15 to 50 percent
 slopes—3 percent
 Hawkridge very stony sandy loam, 8 to 30 percent
 slopes—2 percent
 Pachic Argicryolls very stony sandy loam, 15 to 50
 percent slopes—1 percent
 Glaciers—1 percent
 Thiefridge very stony fine sandy loam, 8 to 50 percent
 slopes—1 percent
 Florand very gravelly peaty sandy loam, 15 to 50 percent
 slopes—1 percent
 Fishsnooze very gravelly peaty coarse sandy loam, cold,
 8 to 50 percent slopes—1 percent
 Fishsnooze very cobbly fine sandy loam, 15 to 50
 percent slopes—1 percent
 Chutes—1 percent

Component Description

Lithnip moist and similar soils

Landform: Summits of mountains
 Slope: 30 to 75 percent
 Parent material: Colluvium derived from andesite or tuff
 breccia over residuum derived from andesite or tuff
 breccia
 Typical vegetation: Needlegrass, bluegrass, other
 perennial forbs, other shrubs

Typical profile:

Surface rock fragments: About 60 percent gravel, 1
 percent stones
 Layer 1—0 to 1 inch; extremely gravelly sandy loam

Layer 2—1 to 5 inches; very gravelly sandy loam
 Layer 3—5 to 15 inches; bedrock

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 4 to 10
 inches
 Saturated hydraulic conductivity class (root zone): High,
 (Permeability class: Moderately rapid)
 Available water capacity: About 0.3 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: R022AY032NV—Alpine ridge

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Component Description

Fishsnooze and similar soils

Landform: Northeast facing mountains
 Slope: 30 to 50 percent, northeast aspect
 Parent material: Colluvium derived from andesite or tuff
 breccia over residuum derived from andesite or tuff
 breccia
 Typical vegetation: Forest canopy—limber pine,
 whitebark pine Forest understory—other perennial
 forbs

Typical profile:

Surface rock fragments: About 5 percent cobbles, 35
 percent gravel
 Layer 1—0 to 1 inch; very gravelly sandy loam
 Layer 2—1 to 9 inches; very gravelly coarse sandy loam
 Layer 3—9 to 13 inches; extremely gravelly coarse
 sandy loam
 Layer 4—13 to 35 inches; extremely cobbly coarse
 sandy loam
 Layer 5—35 to 45 inches; bedrock

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 20 to 40
 inches
 Saturated hydraulic conductivity class (root zone): High,
 (Permeability class: Moderately rapid)
 Available water capacity: About 3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F022AY126NV

Typical soil descriptions including ranges in
 characteristics are in the "Classification of the Soils"
 section.

Contrasting Inclusions

Hawkinspeak and similar soils

Composition: 0 to 3 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, mountain big
 sagebrush, mountain brome
 Ecological site: R022AY010NV—Mountain shoulders
 30+ P.Z.

Lithnip and similar soils

Composition: 0 to 3 percent
 Slope: 30 to 75 percent
 Landform: Mountains
 Typical vegetation: Indian ricegrass, western
 needlegrass, bluegrass, eriogonum, lupine, wild mint,
 goldenweed, mulesears wyethia
 Ecological site: R022AY012NV—Barren slope 20+ P.Z.

Hawkridge and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Shoulders of mountains
 Typical vegetation: Pine needlegrass, goldenweed, low
 sagebrush, prairie junegrass
 Ecological site: R022AY011NV—Mountain ridge 30+
 P.Z.

Chutes

Composition: 0 to 1 percent
 Slope: 75 to 150 percent
 Landform: Avalanche chutes
 Ecological site: None

Fishsnooze and similar soils

Composition: 0 to 1 percent

Slope: 8 to 50 percent, northeast aspect

Landform: Northeast facing mountains

Typical vegetation: Bluegrass, other perennial forbs,
whitebark pine

Ecological site: R022AY051NV—Krummholz

Fishsnooze and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent, northeast aspect

Landform: Northeast facing mountains

Typical vegetation: Ross' sedge, mountain hemlock,
bluegrassEcological site: F022AY114NV—Tsuga
mertensia/Carex-Poa**Florand and similar soils**

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—California red fir,
lodgepole pine Forest understory—western
needlegrass, mountain big sagebrush, mountain
brome, lupine, currant, wild mint, snowberry

Ecological site: F022AY118NV

Glaciers

Composition: 0 to 1 percent

Slope: 15 to 99 percent

Landform: Glaciers

Ecological site: None

Pachic Argicryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, isotic Pachic Argicryolls

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain
brome, muttongrass, other perennial grasses, other
perennial forbs, mountain big sagebrush, bitter
cherry, common chokecherry, snowberry

Ecological site: R022AY020NV—Prunus pocket

Thiefridge and similar soils

Composition: 0 to 1 percent

Slope: 8 to 50 percent

Landform: Shoulders of mountains

Typical vegetation: Bluegrass, needlegrass, other
perennial forbs, mountain big sagebrush, curleaf
mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

ManagementFor information about managing this map unit, see the
following sections and associated tables in this
publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

**102—Lithnip-Rock outcrop-Fishsnooze
complex, 8 to 30 percent slopes****Map Unit Setting**

MLRA: 22A

Landscape: Mountains

Elevation: 9,000 to 12,000

Precipitation: 35 to 55 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 15 to 60 days

CompositionLithnip extremely gravelly sandy loam, moist, 8 to 30
percent slopes—40 percent

Rock outcrop—25 percent

Fishsnooze very gravelly sandy loam, cool, 8 to 30
percent slopes—20 percentHawkinspeak very gravelly sandy loam, 8 to 30 percent
slopes—3 percentLithnip extremely gravelly sandy loam, 8 to 30 percent
slopes—2 percentHawkridge very stony sandy loam, 8 to 30 percent
slopes—2 percent

Rubble land—2 percent

Thiefridge very stony fine sandy loam, 4 to 30 percent
slopes—2 percentFlorand very gravelly peaty sandy loam, 8 to 30 percent
slopes—1 percentFishsnooze very cobbly fine sandy loam, cold, 8 to 50
percent slopes—1 percentAspocket gravelly sandy loam, 8 to 30 percent slopes—1
percent

Glaciers—1 percent

Component Description**Lithnip and similar soils**

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff
breccia over residuum derived from andesite or tuff
brecciaTypical vegetation: Needlegrass, bluegrass, other
perennial forbs, other shrubs

Typical profile:

Surface rock fragments: About 60 percent gravel, 1 percent stones
 Layer 1—0 to 1 inch; extremely gravelly sandy loam
 Layer 2—1 to 5 inches; very gravelly sandy loam
 Layer 3—5 to 15 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 4 to 10 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 0.3 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: R022AY032NV—Alpine ridge

Component Description**Rock outcrop**

Landform: Mountains

Interpretive Groups

Ecological site: None

Component Description**Fishsnooze and similar soils**

Landform: Northeast facing mountains
 Slope: 8 to 30 percent, northeast aspect
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs

Typical profile:

Surface rock fragments: About 5 percent cobbles, 35 percent gravel
 Layer 1—0 to 1 inch; very gravelly sandy loam
 Layer 2—1 to 9 inches; very gravelly coarse sandy loam
 Layer 3—9 to 13 inches; extremely gravelly coarse sandy loam
 Layer 4—13 to 35 inches; extremely cobbly coarse sandy loam

Layer 5—35 to 45 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F022AY126NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Hawkinspeak and similar soils**

Composition: 0 to 3 percent
 Slope: 8 to 30 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome
 Ecological site: R022AY010NV—Mountain shoulders 30+ P.Z.

Hawkridge and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Shoulders of mountains
 Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass
 Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Lithnip moist and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Summits of mountains
 Typical vegetation: Indian ricegrass, western needlegrass, bluegrass, eriogonum, lupine, wild mint, goldenweed, mulesears wyethia
 Ecological site: R022AY012NV—Barren slope 20+ P.Z.

Rubble land

Composition: 0 to 2 percent
 Slope: 15 to 99 percent
 Landform: Scree slopes
 Ecological site: None

Thiefridge and similar soils

Composition: 0 to 2 percent
 Slope: 4 to 30 percent
 Landform: Shoulders of mountains
 Typical vegetation: Bluegrass, needlegrass, other
 perennial forbs, mountain big sagebrush, curleaf
 mountainmahogany
 Ecological site: R022AY024NV—Mahogany Savanna

Aspocket and similar soils

Composition: 0 to 1 percent
 Slope: 8 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender
 wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Fishsnooze and similar soils

Composition: 0 to 1 percent
 Slope: 8 to 50 percent, northeast aspect
 Landform: Northeast facing mountains
 Typical vegetation: Bluegrass, other perennial forbs,
 whitebark pine
 Ecological site: R022AY051NV—Krummholz

Florand and similar soils

Composition: 0 to 1 percent
 Slope: 8 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—California red fir,
 lodgepole pine Forest understory—western
 needlegrass, mountain big sagebrush, mountain
 brome, lupine, currant, wild mint, snowberry
 Ecological site: F022AY118NV

Glaciers

Composition: 0 to 1 percent
 Landform: Glaciers
 Ecological site: None

Management

For information about managing this map unit, see the
 following sections and associated tables in this
 publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

**103—Lithnip-Meiss-Hawkinspeak
association****Map Unit Setting**

MLRA: 22A
 Landscape: Mountains
 Elevation: 8,000 to 10,000
 Precipitation: 40 to 50 inches
 Air temperature: 36 to 39 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Lithnip extremely gravelly sandy loam, 30 to 75 percent
 slopes—40 percent
 Meiss gravelly ashy loam, 15 to 50 percent slopes—30
 percent
 Hawkinspeak very gravelly sandy loam, warm, 30 to 50
 percent slopes—15 percent
 Lostridge very gravelly coarse sandy loam, 15 to 50
 percent slopes—4 percent
 Rock outcrop—3 percent
 Fishsnooze very gravelly sandy loam, 30 to 50 percent
 slopes—3 percent
 Hawkinspeak very gravelly sandy loam, moist, 30 to 50
 percent slopes—2 percent
 Typic Cryaquolls very gravelly sandy loam, 4 to 15
 percent slopes—1 percent
 Hawkridge very stony sandy loam, 8 to 30 percent
 slopes—1 percent
 Aspocket gravelly sandy loam, 4 to 30 percent slopes—1
 percent

Component Description**Lithnip and similar soils**

Landform: Mountains
 Slope: 30 to 75 percent
 Parent material: Colluvium derived from andesite or tuff
 breccia over residuum derived from andesite or tuff
 breccia
 Typical vegetation: Indian ricegrass, western
 needlegrass, bluegrass, eriogonum, lupine, wild mint,
 goldenweed, mulesears wyethia

Typical profile:

Surface rock fragments: About 60 percent gravel, 1
 percent stones
 Layer 1—0 to 2 inches; extremely gravelly sandy loam
 Layer 2—2 to 5 inches; very gravelly sandy loam
 Layer 3—5 to 15 inches; bedrock

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 4 to 10 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 0.3 inch

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY012NV—Barren slope 20+ P.Z.

Component Description**Meiss and similar soils**

Landform: Summits and shoulders of mountains

Slope: 15 to 50 percent

Parent material: Colluvium over residuum weathered from andesite and andesitic lahar

Typical vegetation: Low sagebrush with a diversity of low-lying shrubs, forbs, and grasses.

Typical profile:

Surface rock fragments: About 20 percent gravel, 10 percent cobbles

Layer 1—0 to 6 inches; gravelly ashy loam

Layer 2—6 to 13 inches; gravelly ashy loam

Layer 3—13 to 23 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 7e-8

Ecological site: R022AE211CA—Shallow andesite ridge

Component Description**Hawkinspeak and similar soils**

Landform: Mountains

Slope: 30 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 1 percent boulders, 3 percent stones, 5 percent cobbles, 45 percent gravel

Layer 1—0 to 3 inches; very gravelly sandy loam

Layer 2—3 to 9 inches; very gravelly sandy loam

Layer 3—9 to 33 inches; very gravelly sandy clay loam

Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY021NV—South slope 30+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Lostridge and similar soils**

Composition: 0 to 4 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—mountain big sagebrush, currant, snowberry

Ecological site: F022AY105NV

Fishsnooze and similar soils

Composition: 0 to 3 percent

Slope: 30 to 50 percent, northeast aspect

Landform: Northeast facing mountains

Typical vegetation: Forest canopy—limber pine,
whitebark pine Forest understory—Ross' sedge,
bluegrass, rockcress

Ecological site: F022AY134NV

Rock outcrop

Composition: 0 to 3 percent

Landform: Mountains

Ecological site: None

Hawkinspeak and similar soils

Composition: 0 to 2 percent

Slope: 30 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain
brome, melic, other perennial forbs, mountain big
sagebrush

Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Aspocket and similar soils

Composition: 0 to 1 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen
Forest understory—mountain brome, slender
wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Hawkridge and similar soils

Composition: 0 to 1 percent

Slope: 8 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Pine needlegrass, goldenweed, low
sagebrush, prairie junegrass

Ecological site: R022AY011NV—Mountain ridge 30+
P.Z.

Typic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 4 to 15 percent

Landform: Flood plains

Typical vegetation: Sedge, slender wheatgrass,
bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

Management

For information about managing this map unit, see the
following sections and associated tables in this
publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

110—Jobsis-Whittell-Rock outcrop complex, 8 to 30 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 9,000 to 12,000

Precipitation: 35 to 55 inches

Air temperature: 34 to 37 degrees Fahrenheit

Frost-free period: 25 to 45 days

Composition

Jobsis very gravelly loamy coarse sand, 8 to 30 percent
slopes—45 percent

Whittell very cobbly loamy coarse sand, 8 to 30 percent
slopes—25 percent

Rock outcrop—15 percent

Jobsis very gravelly loamy coarse sand, cold, 8 to 30
percent slopes—5 percent

Typic Cryorthents extremely bouldery loamy coarse
sand, 8 to 30 percent slopes—4 percent

Windyridge very gravelly loamy coarse sand, 8 to 30
percent slopes—3 percent

Waterpeak very bouldery coarse sand, 8 to 30 percent
slopes—1 percent

Buggin extremely bouldery loamy coarse sand, 8 to 30
percent slopes—1 percent

Typic Cryorthents extremely bouldery loamy coarse
sand, 4 to 30 percent slopes—1 percent

Component Description

Jobsis and similar soils

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from granodiorite
over residuum derived from granodiorite

Typical vegetation: Forest canopy—limber pine,
whitebark pine Forest understory—other perennial
forbs

Typical profile:

Surface rock fragments: About 15 percent boulders, 5
percent stones, 15 percent fine gravel, 10 percent
gravel

Layer 1—0 to 5 inches; very gravelly loamy coarse sand

Layer 2—5 to 9 inches; very gravelly loamy coarse sand

Layer 3—9 to 17 inches; very gravelly loamy coarse
sand

Layer 4—17 to 20 inches; very gravelly coarse sand

Layer 5—20 to 30 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.8 inch

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F022AY126NV

Component Description

Whittell and similar soils

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Mountain hemlock, whitebark pine, lodgepole pine

Typical profile:

Surface rock fragments: About 8 percent subrounded stones, 5 percent subrounded cobbles, 70 percent angular gravel, 9 percent subrounded boulders

Layer 1—0 to 0.4 inch; slightly decomposed plant material

Layer 2—0.4 to 7 inches; very cobbly loamy coarse sand

Layer 3—7 to 20 inches; very stony loamy coarse sand

Layer 4—20 to 32 inches; extremely stony loamy coarse sand

Layer 5—32 to 42 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 20 to 39 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 1.1 inches

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7e-7

Ecological site: F022AE001CA

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Jobsis and similar soils

Composition: 0 to 5 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Other perennial forbs, bluegrass, whitebark pine

Ecological site: R022AY051NV—Krummholz

Typic Cryorthents and similar soils

Composition: 0 to 4 percent

Classification: Sandy-skeletal, mixed Typic Cryorthents

Slope: 8 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Forest canopy—lodgepole pine, mountain hemlock Forest understory—other perennial forbs

Ecological site: F022AY126NV

Windyridge and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Summits and shoulders of mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Ecological site: R022AY032NV—Alpine ridge

Buggin and similar soils

Composition: 0 to 1 percent

Slope: 8 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Typic Cryorthents and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed, shallow Typic Cryorthents

Slope: 4 to 30 percent

Landform: Summits of mountains

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—Ross' sedge

Ecological site: F022AY109NV

Waterpeak and similar soils

Composition: 0 to 1 percent

Slope: 8 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY021NV—South slope 30+ P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

111—Whittell-Jobsis-Rock outcrop complex, 30 to 75 percent slopes**Map Unit Setting**

MLRA: 22A

Landscape: Mountains

Elevation: 9,000 to 12,000

Precipitation: 35 to 55 inches

Air temperature: 34 to 37 degrees Fahrenheit

Frost-free period: 25 to 45 days

Composition

Whittell very cobbly loamy coarse sand, 30 to 75 percent slopes—45 percent

Jobsis very gravelly loamy coarse sand, 30 to 75 percent slopes—25 percent

Rock outcrop—15 percent

Typic Cryorthents extremely bouldery loamy coarse sand, 15 to 50 percent slopes—3 percent

Typic Cryorthents extremely bouldery loamy coarse sand, 8 to 30 percent slopes—3 percent

Klauspeak gravelly loamy sand, 15 to 50 percent slopes—2 percent

Shalgran very bouldery coarse sand, 30 to 75 percent slopes—2 percent

Waterpeak very bouldery coarse sand, 30 to 75 percent slopes—1 percent

Buggin extremely bouldery loamy coarse sand, 30 to 75 percent slopes—1 percent

Typic Cryorthents extremely bouldery loamy coarse sand, 15 to 50 percent slopes—1 percent

Chutes—1 percent

Glaciers—1 percent

Component Description**Whittell and similar soils**

Landform: Mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Mountain hemlock, whitebark pine, lodgepole pine

Typical profile:

Surface rock fragments: About 8 percent subrounded stones, 70 percent angular gravel, 9 percent subrounded boulders, 5 percent subrounded cobbles

Layer 1—0 to 0.4 inch; slightly decomposed plant material

Layer 2—0.4 to 7 inches; very cobbly loamy coarse sand

Layer 3—7 to 20 inches; very stony loamy coarse sand

Layer 4—20 to 32 inches; extremely stony loamy coarse sand

Layer 5—32 to 42 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 20 to 39 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 1.1 inches

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7e-7

Ecological site: F022AE001CA

Component Description**Jobsis and similar soils**

Landform: Mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs

Typical profile:

Surface rock fragments: About 15 percent fine gravel, 15 percent boulders, 10 percent gravel, 5 percent stones

Layer 1—0 to 5 inches; very gravelly loamy coarse sand

Layer 2—5 to 9 inches; very gravelly loamy coarse sand

Layer 3—9 to 17 inches; very gravelly loamy coarse sand

Layer 4—17 to 20 inches; very gravelly coarse sand

Layer 5—20 to 30 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.8 inch

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F022AY126NV

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Typic Cryorthents and similar soils

Composition: 0 to 3 percent

Classification: Sandy-skeletal, mixed Typic Cryorthents

Slope: 15 to 50 percent

Landform: Shoulders of mountains

Typical vegetation: Forest canopy—lodgepole pine, mountain hemlock Forest understory—other perennial forbs

Ecological site: F022AY126NV

Typic Cryorthents and similar soils

Composition: 0 to 3 percent

Classification: Sandy-skeletal, mixed, shallow Typic Cryorthents

Slope: 8 to 30 percent

Landform: Summits of mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Ecological site: R022AY032NV—Alpine ridge

Klauspeak and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent, north aspect

Landform: North facing backslopes of mountains

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry

Ecological site: F022AY118NV

Shalgran and similar soils

Composition: 0 to 2 percent

Slope: 30 to 75 percent, south aspect

Landform: South facing mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, pinemat manzanita, snowbrush ceanothus, Sierra chinkapin, snowberry

Ecological site: F022AY120NV

Buggin and similar soils

Composition: 0 to 1 percent

Slope: 30 to 75 percent

Landform: Backslopes of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Chutes

Composition: 0 to 1 percent

Slope: 75 to 150 percent

Landform: Avalanche chutes

Ecological site: None

Glaciers

Composition: 0 to 1 percent

Landform: Glaciers
Ecological site: None

Typic Cryorthents and similar soils

Composition: 0 to 1 percent
Classification: Sandy-skeletal, mixed, shallow Typic Cryorthents
Slope: 15 to 50 percent
Landform: Summits of mountains
Typical vegetation: Forest canopy—lodgepole pine
Forest understory—Ross' sedge
Ecological site: F022AY109NV

Waterpeak and similar soils

Composition: 0 to 1 percent
Slope: 30 to 75 percent
Landform: Shoulders of mountains
Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush
Ecological site: R022AY021NV—South slope 30+ P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section
"Forest land" section
"Engineering" and "Soil Properties" sections

112—Jobsis-Whittell-Rock outcrop complex, cool, 8 to 30 percent slopes

Map Unit Setting

MLRA: 22A
Landscape: Mountains
Elevation: 9,000 to 12,000
Precipitation: 35 to 55 inches
Air temperature: 34 to 37 degrees Fahrenheit
Frost-free period: 25 to 45 days

Composition

Jobsis very gravelly loamy coarse sand, cool, 8 to 30 percent slopes—45 percent
Whittell very cobbly loamy coarse sand, 8 to 30 percent slopes—25 percent
Rock outcrop—15 percent
Typic Cryorthents extremely bouldery loamy coarse sand, 8 to 30 percent slopes—4 percent
Windyridge very gravelly loamy coarse sand, 8 to 30 percent slopes—3 percent
Klauspeak gravelly loamy sand, 30 to 50 percent slopes—2 percent

Shalgran very bouldery coarse sand, 30 to 75 percent slopes—2 percent
Buggin extremely bouldery loamy coarse sand, 8 to 30 percent slopes—1 percent
Typic Cryorthents extremely bouldery loamy coarse sand, 4 to 30 percent slopes—1 percent
Waterpeak very bouldery coarse sand, 8 to 30 percent slopes—1 percent

Component Description

Jobsis and similar soils

Landform: Mountains
Slope: 8 to 30 percent
Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
Typical vegetation: Forest canopy—whitebark pine
Forest understory—other perennial forbs

Typical profile:

Surface rock fragments: About 15 percent boulders, 5 percent stones, 15 percent fine gravel, 10 percent gravel

Layer 1—0 to 5 inches; very gravelly loamy coarse sand

Layer 2—5 to 9 inches; very gravelly loamy coarse sand

Layer 3—9 to 17 inches; very gravelly loamy coarse sand

Layer 4—17 to 20 inches; very gravelly coarse sand

Layer 5—20 to 30 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.8 inch

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F022AY134NV

Component Description

Whittell and similar soils

Landform: East to southwest aspects on mountains
Slope: 8 to 30 percent, east to southwest aspects
Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
Typical vegetation: Whitebark pine

Typical profile:

Surface rock fragments: About 8 percent subrounded stones, 5 percent subrounded cobbles, 70 percent angular gravel, 9 percent subrounded boulders
 Layer 1—0 to 0.4 inch; slightly decomposed plant material
 Layer 2—0.4 to 7 inches; very cobbly loamy coarse sand
 Layer 3—7 to 20 inches; very stony loamy coarse sand
 Layer 4—20 to 32 inches; extremely stony loamy coarse sand
 Layer 5—32 to 42 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
 Depth to restrictive feature: Bedrock (paralithic): 20 to 39 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 1.1 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7e-7
 Ecological site: F022AE001CA

Component Description**Rock outcrop**

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Typic Cryorthents and similar soils**

Composition: 0 to 4 percent
 Classification: Sandy-skeletal, mixed Typic Cryorthents
 Slope: 8 to 30 percent
 Landform: Shoulders of mountains
 Typical vegetation: Forest canopy—whitebark pine
 Forest understory—other perennial forbs
 Ecological site: F022AY134NV

Windyridge and similar soils

Composition: 0 to 3 percent
 Slope: 8 to 30 percent
 Landform: Summits and shoulders of mountains
 Typical vegetation: Forest canopy—whitebark pine
 Forest understory—needlegrass, bluegrass, other perennial forbs, other shrubs
 Ecological site: R022AY032NV—Alpine ridge

Klauspeak and similar soils

Composition: 0 to 2 percent
 Slope: 30 to 50 percent, north aspect
 Landform: North facing backslopes of mountains
 Typical vegetation: Forest canopy—whitebark pine
 Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry
 Ecological site: F022AY118NV

Shalgran and similar soils

Composition: 0 to 2 percent
 Slope: 30 to 75 percent, south aspect
 Landform: South facing mountains
 Typical vegetation: Forest canopy—whitebark pine
 Forest understory—other perennial forbs, pinemat manzanita, snowbrush ceanothus, Sierra chinkapin, snowberry
 Ecological site: F022AY120NV

Buggin and similar soils

Composition: 0 to 1 percent
 Slope: 8 to 30 percent
 Landform: Backslopes of mountains
 Typical vegetation: Forest canopy—whitebark pine
 Forest understory—bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany
 Ecological site: R022AY024NV—Mahogany Savanna

Typic Cryorthents and similar soils

Composition: 0 to 1 percent
 Classification: Sandy-skeletal, mixed, shallow Typic Cryorthents
 Slope: 4 to 30 percent
 Landform: Summits of mountains
 Typical vegetation: Forest canopy—whitebark pine
 Forest understory—Ross' sedge
 Ecological site: F022AY109NV

Waterpeak and similar soils

Composition: 0 to 1 percent

Slope: 8 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Forest canopy—whitebark pine

Forest understory—western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY021NV—South slope 30+ P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

113—Whittell-Jobsis-Rock outcrop complex, cool, 30 to 75 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 9,000 to 12,000

Precipitation: 35 to 55 inches

Air temperature: 34 to 37 degrees Fahrenheit

Frost-free period: 25 to 45 days

Composition

Whittell very cobbly loamy coarse sand, 30 to 75 percent slopes—45 percent

Jobsis very gravelly loamy coarse sand, cool, 30 to 75 percent slopes—25 percent

Rock outcrop—15 percent

Windyridge very gravelly loamy coarse sand, 8 to 30 percent slopes—4 percent

Jobsis very gravelly loamy coarse sand, cold, 8 to 30 percent slopes—4 percent

Klauspeak gravelly loamy sand, 15 to 50 percent slopes—2 percent

Shalgran very bouldery coarse sand, 30 to 75 percent slopes—2 percent

Buggin extremely bouldery loamy coarse sand, 30 to 75 percent slopes—1 percent

Typic Cryorthents extremely bouldery loamy coarse sand, 15 to 50 percent slopes—1 percent

Waterpeak very bouldery coarse sand, 30 to 75 percent slopes—1 percent

Component Description

Whittell and similar soils

Landform: East to southwest aspects on mountains

Slope: 30 to 75 percent, east to southwest aspects

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Whitebark pine

Typical profile:

Surface rock fragments: About 8 percent subrounded stones, 70 percent angular gravel, 9 percent subrounded boulders, 5 percent subrounded cobbles

Layer 1—0 to 0.4 inch; slightly decomposed plant material

Layer 2—0.4 to 7 inches; very cobbly loamy coarse sand

Layer 3—7 to 20 inches; very stony loamy coarse sand

Layer 4—20 to 32 inches; extremely stony loamy coarse sand

Layer 5—32 to 42 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 20 to 39 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 1.1 inches

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7e-7

Ecological site: F022AE001CA

Component Description

Jobsis and similar soils

Landform: Mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—whitebark pine

Forest understory—other perennial forbs

Typical profile:

Surface rock fragments: About 15 percent fine gravel, 15 percent boulders, 10 percent gravel, 5 percent stones

Layer 1—0 to 5 inches; very gravelly loamy coarse sand

Layer 2—5 to 9 inches; very gravelly loamy coarse sand

Layer 3—9 to 17 inches; very gravelly loamy coarse sand

Layer 4—17 to 20 inches; very gravelly coarse sand

Layer 5—20 to 30 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.8 inch

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F022AY134NV

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Jobsis and similar soils

Composition: 0 to 4 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—whitebark pine
Forest understory—limber pine, bluegrass, other perennial forbs

Ecological site: R022AY051NV—Krummholz

Windyridge and similar soils

Composition: 0 to 4 percent

Slope: 8 to 30 percent

Landform: Shoulders and summits of mountains

Typical vegetation: Forest canopy—whitebark pine
Forest understory—needlegrass, bluegrass, other perennial forbs, other shrubs

Ecological site: R022AY032NV—Alpine ridge

Klauspeak and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent, north aspect

Landform: North facing backslopes of mountains

Typical vegetation: Forest canopy—whitebark pine
Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry

Ecological site: F022AY118NV

Shalgran and similar soils

Composition: 0 to 2 percent

Slope: 30 to 75 percent, south aspect

Landform: South facing mountains

Typical vegetation: Forest canopy—whitebark pine
Forest understory—other perennial forbs, pinemat manzanita, snowbrush ceanothus, Sierra chinkapin, snowberry

Ecological site: F022AY120NV

Buggin and similar soils

Composition: 0 to 1 percent

Slope: 30 to 75 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—whitebark pine
Forest understory—bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Typic Cryorthents and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed, shallow Typic Cryorthents

Slope: 15 to 50 percent

Landform: Summits of mountains

Typical vegetation: Forest canopy—whitebark pine
Forest understory—Ross' sedge

Ecological site: F022AY109NV

Waterpeak and similar soils

Composition: 0 to 1 percent

Slope: 30 to 75 percent

Landform: Shoulders of mountains

Typical vegetation: Forest canopy—whitebark pine
Forest understory—western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY021NV—South slope 30+ P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

120—Toiyabe-Corbett-Rock outcrop complex, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 5,500 to 8,000

Precipitation: 16 to 35 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 50 to 70 days

Composition

Toiyabe very bouldery loamy coarse sand, 30 to 50 percent slopes—45 percent

Corbett very bouldery loamy coarse sand, 30 to 50 percent slopes—25 percent

Rock outcrop—15 percent

Klauspeak gravelly loamy sand, 15 to 50 percent slopes—5 percent

Burnlake extremely gravelly sandy loam, 15 to 50 percent slopes—3 percent

Shalgran very bouldery coarse sand, 30 to 50 percent slopes—2 percent

Glenbrook gravelly loamy coarse sand, 15 to 50 percent slopes—2 percent

Aquic Haplocryolls very bouldery sandy loam, 15 to 50 percent slopes—1 percent

Lostcannon very gravelly coarse sandy loam, 8 to 50 percent slopes—1 percent

Granhogany very gravelly loamy coarse sand, 15 to 50 percent slopes—1 percent

Component Description

Toiyabe and similar soils

Landform: Mountains

Slope: 30 to 50 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Site index: Jeffrey pine—35

Typical profile:

Surface rock fragments: About 20 percent fine gravel, 10 percent gravel, 5 percent cobbles, 5 percent stones, 15 percent boulders

Layer 1—0 to 9 inches; very bouldery loamy coarse sand

Layer 2—9 to 16 inches; gravelly loamy coarse sand

Layer 3—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.9 inch

Present flooding: None

Present ponding: None

Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 7e

Ecological site: F022AY116NV

Component Description

Corbett and similar soils

Landform: Mountains

Slope: 30 to 50 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Site index: Jeffrey pine—70

Typical profile:

Surface rock fragments: About 15 percent boulders, 5 percent stones, 5 percent cobbles, 20 percent gravel

Layer 1—0 to 9 inches; very bouldery loamy coarse sand

Layer 2—9 to 23 inches; gravelly coarse sand

Layer 3—23 to 33 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 1.2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7e

Ecological site: F022AY116NV

Component Description**Rock outcrop**

Landform: Peaks

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Klauspeak and similar soils**

Composition: 0 to 5 percent

Slope: 15 to 50 percent, north aspect

Landform: North facing backslopes of mountains

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry

Ecological site: F022AY118NV

Burnlake and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Moraines

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Glenbrook and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Desert needlegrass, Thurber needlegrass, Wyoming big sagebrush, green ephedra, other perennial forbs, antelope bitterbrush

Ecological site: R026XY018NV—Granitic south slope 10-12 P.Z.

Shalgran and similar soils

Composition: 0 to 2 percent

Slope: 30 to 50 percent, south aspect

Landform: South facing mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, pinemat manzanita, snowbrush ceanothus, Sierra chinkapin, snowberry

Ecological site: F022AY120NV

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, isotic Aquic Haplocryolls

Slope: 15 to 50 percent

Landform: Foothills of mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada

bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Granhogany and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Lostcannon and similar soils

Composition: 0 to 1 percent

Slope: 8 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender

wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

121—Toiyabe-Corbett-Rock outcrop complex, 8 to 30 percent slopes***Map Unit Setting***

MLRA: 22A

Landscape: Mountains

Elevation: 5,500 to 8,000

Precipitation: 16 to 35 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 50 to 70 days

Composition

Toiyabe very bouldery loamy coarse sand, 8 to 30 percent slopes—45 percent

Corbett very bouldery loamy coarse sand, 8 to 30 percent slopes—35 percent
 Rock outcrop—10 percent
 Sofgran gravelly loamy coarse sand, 8 to 30 percent slopes—4 percent
 Burnlake extremely gravelly sandy loam, 8 to 30 percent slopes—4 percent
 Lostcannon very gravelly coarse sandy loam, 4 to 30 percent slopes—2 percent

Component Description

Toiyabe and similar soils

Landform: Mountains
 Slope: 8 to 30 percent
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
 Site index: Jeffrey pine—35

Typical profile:

Surface rock fragments: About 20 percent fine gravel, 15 percent boulders, 10 percent gravel, 5 percent cobbles, 5 percent stones
 Layer 1—0 to 9 inches; very bouldery loamy coarse sand
 Layer 2—9 to 16 inches; gravelly loamy coarse sand
 Layer 3—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
 Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 0.9 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 7e
 Ecological site: F022AY116NV

Component Description

Corbett and similar soils

Landform: Mountains

Slope: 8 to 30 percent
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
 Site index: Jeffrey pine—70

Typical profile:

Surface rock fragments: About 20 percent gravel, 15 percent boulders, 5 percent cobbles, 5 percent stones
 Layer 1—0 to 9 inches; very bouldery loamy coarse sand
 Layer 2—9 to 23 inches; gravelly loamy coarse sand
 Layer 3—23 to 33 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
 Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 1.2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7e
 Ecological site: F022AY116NV

Component Description

Rock outcrop

Landform: Peaks

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Burnlake and similar soils

Composition: 0 to 4 percent
 Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—Jeffrey pine Forest
understory—other perennial forbs, mountain big
sagebrush, snowberry, currant

Ecological site: F022AY116NV

Sofgran and similar soils

Composition: 0 to 4 percent

Slope: 8 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—California red fir,
lodgepole pine Forest understory—wild mint,
western needlegrass, pinemat manzanita, lupine

Ecological site: F022AY106NV

Lostcannon and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen
Forest understory—mountain brome, slender
wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Management

For information about managing this map unit, see the
following sections and associated tables in this
publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

122—Toiyabe-Corbett-Rock outcrop complex, 50 to 75 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 5,500 to 8,000

Precipitation: 16 to 35 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 50 to 70 days

Composition

Toiyabe very bouldery loamy coarse sand, 50 to 75
percent slopes—50 percent

Corbett very bouldery loamy coarse sand, 50 to 75
percent slopes—20 percent

Rock outcrop—15 percent

Granhogany very gravelly loamy coarse sand, 15 to 50
percent slopes—3 percent

Shalgran very bouldery coarse sand, 30 to 50 percent
slopes—2 percent

Pimogran very gravelly loamy coarse sand, 50 to 75
percent slopes—2 percent

Toejom very gravelly coarse sand, dry, 50 to 75 percent
slopes—2 percent

Burnlake extremely gravelly sandy loam, 15 to 50
percent slopes—1 percent

Aquic Haplocryolls very bouldery sandy loam, 15 to 50
percent slopes—1 percent

Lostcannon very gravelly coarse sandy loam, 8 to 50
percent slopes—1 percent

Toiyabe very bouldery loamy coarse sand, 15 to 50
percent slopes—1 percent

Elaero very gravelly loamy coarse sand, 30 to 75
percent slopes—1 percent

Chutes—1 percent

Component Description

Toiyabe and similar soils

Landform: Mountains

Slope: 50 to 75 percent

Parent material: Colluvium derived from granodiorite
over residuum derived from granodiorite

Typical vegetation: Forest canopy—Jeffrey pine Forest
understory—other perennial forbs, mountain big
sagebrush, snowberry, currant

Site index: Jeffrey pine—35

Typical profile:

Surface rock fragments: About 20 percent fine gravel, 10
percent gravel, 5 percent cobbles, 5 percent stones,
15 percent boulders

Layer 1—0 to 9 inches; very bouldery loamy coarse
sand

Layer 2—9 to 16 inches; gravelly loamy coarse sand

Layer 3—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the
"Physical Properties of Soils" table for more
information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 10 to 20
inches

Saturated hydraulic conductivity class (root zone): High,
(Permeability class: Rapid)

Available water capacity: About 0.9 inch

Present flooding: None

Present ponding: None

Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 7e

Ecological site: F022AY116NV

Component Description

Corbett and similar soils

Landform: Mountains

Slope: 50 to 75 percent

Parent material: Colluvium derived from granodiorite
over residuum derived from granodiorite

Typical vegetation: Forest canopy—Jeffrey pine Forest
understory—other perennial forbs, mountain big
sagebrush, snowberry, currant

Site index: Jeffrey pine—70

Typical profile:

Surface rock fragments: About 15 percent boulders, 5
percent stones, 5 percent cobbles, 20 percent gravel

Layer 1—0 to 9 inches; very bouldery loamy coarse
sand

Layer 2—9 to 23 inches; gravelly loamy coarse sand

Layer 3—23 to 33 inches; bedrock

See "Chemical Properties of Soils" table and the
"Physical Properties of Soils" table for more
information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 20 to 40
inches

Saturated hydraulic conductivity class (root zone): High,
(Permeability class: Rapid)

Available water capacity: About 1.2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7e

Ecological site: F022AY116NV

Component Description

Rock outcrop

Landform: Peaks

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in
characteristics are in the "Classification of the Soils"
section.

Contrasting Inclusions

Granhogany and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Bluegrass, needlegrass, other
perennial forbs, mountain big sagebrush, curleaf
mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Pimogran and similar soils

Composition: 0 to 2 percent

Slope: 50 to 75 percent, north aspect

Landform: North facing mountains

Typical vegetation: Forest canopy—singleleaf pinyon
Forest understory—needlegrass, muttongrass,
mountain big sagebrush, currant, snowberry,
antelope bitterbrush

Ecological site: F026XY044NV

Shalgran and similar soils

Composition: 0 to 2 percent

Slope: 30 to 50 percent, south aspect

Landform: South facing mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest
understory—mountain big sagebrush, currant,
snowberry

Ecological site: F022AY130NV

Toejom and similar soils

Composition: 0 to 2 percent

Slope: 50 to 75 percent, south aspect

Landform: South facing mountains

Typical vegetation: Forest canopy—singleleaf pinyon
Forest understory—mountain big sagebrush,
antelope bitterbrush, currant

Ecological site: F026XY061NV

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, isotic Aquic Haplocryolls

Slope: 15 to 50 percent

Landform: Footslopes of mountains

Typical vegetation: Forest canopy—quaking aspen
Forest understory—slender wheatgrass, Nevada
bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Burnlake and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent
 Landform: Moraines
 Typical vegetation: Forest canopy—Jeffrey pine Forest
 understory—other perennial forbs, mountain big
 sagebrush, snowberry, currant
 Ecological site: F022AY116NV

Chutes

Composition: 0 to 1 percent
 Slope: 75 to 150 percent
 Landform: Avalanche chutes
 Ecological site: None

Elaero and similar soils

Composition: 0 to 1 percent
 Slope: 30 to 75 percent
 Landform: Mountains
 Typical vegetation: Needlegrass, Indian ricegrass, other
 perennial forbs, mountain big sagebrush, antelope
 bitterbrush
 Ecological site: R022AY043NV—South slope 14-16 P.Z.

Lostcannon and similar soils

Composition: 0 to 1 percent
 Slope: 8 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender
 wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Toiyabe and similar soils

Composition: 0 to 1 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—Jeffrey pine Forest
 understory—other perennial forbs, mountain big
 sagebrush, snowberry, currant
 Ecological site: F022AY116NV

Management

For information about managing this map unit, see the
 following sections and associated tables in this
 publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

130—Sofgran-Klauspeak-Temo association

Map Unit Setting

MLRA: 22A

Landscape: Mountains
 Elevation: 8,000 to 9,000
 Precipitation: 35 to 55 inches
 Air temperature: 36 to 39 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Sofgran gravelly loamy coarse sand, 15 to 50 percent
 slopes—40 percent
 Klauspeak gravelly loamy sand, 15 to 50 percent
 slopes—30 percent
 Temo very gravelly loamy coarse sand, 15 to 50 percent
 slopes—15 percent
 Rock outcrop—4 percent
 Shalgran very bouldery coarse sand, 30 to 75 percent
 slopes—4 percent
 Xeric Dystrocrypts very bouldery loamy sand, 15 to 50
 percent slopes—3 percent
 Stumpatil very gravelly coarse sandy loam, 8 to 30
 percent slopes—2 percent
 Hopeval very fine sandy loam, 2 to 8 percent slopes—1
 percent
 Aquic Haplocryolls very bouldery sandy loam, 4 to 30
 percent slopes—1 percent

Component Description

Sofgran and similar soils

Landform: South facing backslopes of mountains
 Slope: 15 to 50 percent, south aspect
 Parent material: Colluvium derived from granodiorite
 over residuum derived from granodiorite
 Typical vegetation: Forest canopy—California red fir,
 lodgepole pine Forest understory—wild mint,
 western needlegrass, pinemat manzanita, lupine
 Site index: California red fir—29
 Site index: Lodgepole pine—68

Typical profile:

Surface rock fragments: About 15 percent fine gravel, 5
 percent gravel, 5 percent cobbles, 1 percent stones,
 3 percent boulders
 Layer 1—0 to 3 inches; gravelly loamy coarse sand
 Layer 2—3 to 6 inches; gravelly loamy coarse sand
 Layer 3—6 to 9 inches; very gravelly loamy coarse sand
 Layer 4—9 to 19 inches; very gravelly loamy coarse
 sand
 Layer 5—19 to 27 inches; very gravelly coarse sand
 Layer 6—27 to 45 inches; extremely gravelly loamy
 coarse sand
 Layer 7—45 to 60 inches; very gravelly loamy coarse
 sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
 Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 6e
 Ecological site: F022AY106NV

Component Description

Klauspeak and similar soils

Landform: North facing backslopes of mountains
 Slope: 15 to 50 percent, north aspect
 Parent material: Colluvium from granodiorite
 Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry
 Site index: California red fir—29
 Site index: Lodgepole pine—52

Typical profile:

Surface rock fragments: About 10 percent fine gravel, 5 percent boulders, 5 percent gravel, 5 percent stones
 Layer 1—0 to 5 inches; gravelly loamy sand
 Layer 2—5 to 16 inches; gravelly loamy sand
 Layer 3—16 to 22 inches; very stony loamy sand
 Layer 4—22 to 40 inches; very stony loamy coarse sand
 Layer 5—40 to 60 inches; very cobbly coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
 Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 4 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 6e
 Ecological site: F022AY118NV

Component Description

Temo and similar soils

Landform: Mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—other perennial forbs
 Site index: California red fir—20
 Site index: Lodgepole pine—67

Typical profile:

Surface rock fragments: About 20 percent fine gravel, 10 percent gravel, 5 percent cobbles, 5 percent stones, 5 percent boulders
 Layer 1—0 to 10 inches; very gravelly loamy coarse sand
 Layer 2—10 to 16 inches; gravelly coarse sand
 Layer 3—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Depth to restrictive feature: Bedrock (paralithic): 8 to 20 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 0.8 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 8
 Ecological site: F022AY121NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop

Composition: 0 to 4 percent
 Landform: Mountains
 Ecological site: None

Shalgran and similar soils

Composition: 0 to 4 percent

Slope: 30 to 75 percent, south aspect

Landform: South facing mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, pinemat manzanita, snowbrush ceanothus, Sierra chinkapin, snowberry

Ecological site: F022AY120NV

Xeric Dystrocryepts and similar soils

Composition: 0 to 3 percent

Classification: Sandy-skeletal, mixed Xeric Dystrocryepts

Slope: 15 to 50 percent, north aspect

Landform: North facing backslopes of mountains

Typical vegetation: Forest canopy—mountain hemlock

Forest understory—Sedge, currant

Ecological site: F022AY114NV

Stumpatil and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry

Ecological site: F022AY118NV

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, isotic Aquic Haplocryolls

Slope: 4 to 30 percent

Landform: Footslopes of mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Hopeval and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive, Cumulic Cryaquolls

Slope: 2 to 8 percent

Landform: Flood plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

131—Sofgran-Temo-Shalgran association**Map Unit Setting**

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 9,000

Precipitation: 30 to 45 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Sofgran gravelly loamy coarse sand, 15 to 50 percent slopes—40 percent

Temo very gravelly loamy coarse sand, 15 to 50 percent slopes—25 percent

Shalgran very bouldery coarse sand, dry, 15 to 50 percent slopes—20 percent

Buggin extremely bouldery loamy coarse sand, 15 to 50 percent slopes—4 percent

Waterpeak gravelly loamy coarse sand, moist, 8 to 30 percent slopes—3 percent

Rock outcrop—2 percent

Waterpeak very bouldery coarse sand, 15 to 50 percent slopes—2 percent

Klauspeak gravelly loamy sand, 15 to 50 percent slopes—2 percent

Hopeval very fine sandy loam, 4 to 15 percent slopes—1 percent

Lostcannon very gravelly coarse sandy loam, 4 to 30 percent slopes—1 percent

Component Description**Sofgran and similar soils**

Landform: South facing backslopes of mountains

Slope: 15 to 50 percent, south aspect

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—wild mint, western needlegrass, pinemat manzanita, lupine

Site index: California red fir—29

Site index: Lodgepole pine—68

Typical profile:

Surface rock fragments: About 15 percent fine gravel, 5 percent gravel, 5 percent cobbles, 3 percent boulders, 1 percent stones

Layer 1—0 to 3 inches; gravelly loamy coarse sand

Layer 2—3 to 6 inches; gravelly loamy coarse sand

Layer 3—6 to 9 inches; very gravelly loamy coarse sand

Layer 4—9 to 19 inches; very gravelly loamy coarse sand

Layer 5—19 to 27 inches; very gravelly coarse sand

Layer 6—27 to 45 inches; extremely gravelly loamy coarse sand

Layer 7—45 to 60 inches; very gravelly loamy coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 6e

Ecological site: F022AY106NV

Component Description**Temo and similar soils**

Landform: Mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—other perennial forbs

Site index: California red fir—20

Site index: Lodgepole pine—67

Typical profile:

Surface rock fragments: About 20 percent fine gravel, 10 percent gravel, 5 percent cobbles, 5 percent stones, 5 percent boulders

Layer 1—0 to 10 inches; very gravelly loamy coarse sand

Layer 2—10 to 16 inches; gravelly coarse sand

Layer 3—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 8 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.8 inch

Present flooding: None

Present ponding: None

Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 8

Ecological site: F022AY121NV

Component Description**Shalgran and similar soils**

Landform: South facing mountains

Slope: 15 to 50 percent, south aspect

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—mountain big sagebrush, currant, snowberry

Site index: Jeffrey pine—41

Typical profile:

Surface rock fragments: About 15 percent fine gravel, 10 percent gravel, 5 percent stones, 15 percent boulders

Layer 1—0 to 3 inches; very bouldery coarse sand

Layer 2—3 to 14 inches; very bouldery coarse sand

Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.8 inch

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F022AY130NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Buggin and similar soils**

Composition: 0 to 4 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Waterpeak and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Footslopes of mountains

Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush

Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Klauspeak and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent, north aspect

Landform: North facing backslopes of mountains

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry

Ecological site: F022AY118NV

Rock outcrop

Composition: 0 to 2 percent

Landform: Mountains

Ecological site: None

Waterpeak and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY021NV—South slope 30+ P.Z.

Hopeval and similar soils

Composition: 0 to 1 percent

Slope: 4 to 15 percent

Landform: Flood plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Lostcannon and similar soils

Composition: 0 to 1 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

132—Sofgran-Temo-Rock outcrop association***Map Unit Setting***

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 9,000

Precipitation: 30 to 45 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Sofgran gravelly loamy coarse sand, 15 to 50 percent slopes—50 percent

Temo very gravelly loamy coarse sand, 15 to 50 percent slopes—25 percent

Rock outcrop—10 percent

Stumpatil very gravelly coarse sandy loam, 15 to 50 percent slopes—5 percent

Waterpeak very bouldery coarse sand, 15 to 50 percent slopes—3 percent

Buggin extremely bouldery loamy coarse sand, 8 to 30 percent slopes—3 percent

Aspetill very gravelly sandy loam, 8 to 30 percent slopes—2 percent

Typic Cryaquolls very gravelly sandy loam, 4 to 15 percent slopes—1 percent
 Cumulic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—1 percent

Component Description

Sofgran and similar soils

Landform: South facing backslopes of mountains
 Slope: 15 to 50 percent, south aspect
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—wild mint, western needlegrass, pinemat manzanita, lupine
 Site index: California red fir—29
 Site index: Lodgepole pine—68

Typical profile:

Surface rock fragments: About 15 percent fine gravel, 5 percent gravel, 5 percent cobbles, 1 percent stones, 3 percent boulders
 Layer 1—0 to 3 inches; gravelly loamy coarse sand
 Layer 2—3 to 6 inches; gravelly loamy coarse sand
 Layer 3—6 to 9 inches; very gravelly loamy coarse sand
 Layer 4—9 to 19 inches; very gravelly loamy coarse sand
 Layer 5—19 to 27 inches; very gravelly coarse sand
 Layer 6—27 to 45 inches; extremely gravelly loamy coarse sand
 Layer 7—45 to 60 inches; very gravelly loamy coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
 Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 6e
 Ecological site: F022AY106NV

Component Description

Temo and similar soils

Landform: Mountains

Slope: 15 to 50 percent
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—other perennial forbs
 Site index: California red fir—20
 Site index: Lodgepole pine—67

Typical profile:

Surface rock fragments: About 20 percent fine gravel, 10 percent gravel, 5 percent cobbles, 5 percent stones, 5 percent boulders
 Layer 1—0 to 10 inches; very gravelly loamy coarse sand
 Layer 2—10 to 16 inches; gravelly coarse sand
 Layer 3—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Depth to restrictive feature: Bedrock (paralithic): 8 to 20 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 0.8 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 8
 Ecological site: F022AY121NV

Component Description

Rock outcrop

Landform: Peaks

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Stumpatil and similar soils

Composition: 0 to 5 percent
 Slope: 15 to 50 percent
 Landform: Moraines

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry
Ecological site: F022AY118NV

Buggin and similar soils

Composition: 0 to 3 percent
Slope: 8 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany
Ecological site: R022AY024NV—Mahogany Savanna

Waterpeak and similar soils

Composition: 0 to 3 percent
Slope: 15 to 50 percent
Landform: Mountains
Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush
Ecological site: R022AY021NV—South slope 30+ P.Z.

Aspetill and similar soils

Composition: 0 to 2 percent
Slope: 8 to 30 percent
Landform: Moraines
Typical vegetation: Forest canopy—quaking aspen Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry
Ecological site: F022AY103NV

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent
Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls
Slope: 2 to 8 percent
Landform: Dissected plains
Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs
Ecological site: R022AY017NV—Semi-wet meadow

Typic Cryaquolls and similar soils

Composition: 0 to 1 percent
Classification: Sandy-skeletal, mixed Typic Cryaquolls
Slope: 4 to 15 percent
Landform: Flood plains
Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow
Ecological site: R022AY034NV—Moist willow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

140—Temo-Dagget-Rock outcrop complex, 30 to 75 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 7,500 to 9,300

Precipitation: 30 to 60 inches

Air temperature: 36 to 43 degrees Fahrenheit

Frost-free period: 20 to 60 days

Composition

Temo very gravelly loamy coarse sand, 50 to 75 percent slopes—40 percent

Dagget very gravelly loamy coarse sand, 30 to 50 percent slopes—30 percent

Rock outcrop—15 percent

Toiyabe extremely bouldery loamy coarse sand, 30 to 75 percent slopes—5 percent

Corbett extremely bouldery loamy coarse sand, 30 to 75 percent slopes—4 percent

Buggin extremely bouldery loamy coarse sand, 30 to 75 percent slopes—2 percent

Hopeval very fine sandy loam, 4 to 15 percent slopes—1 percent

Aquic Haplocryolls very bouldery sandy loam, 8 to 30 percent slopes—1 percent

Waterpeak very bouldery coarse sand, 30 to 75 percent slopes—1 percent

Chutes—1 percent

Component Description

Temo and similar soils

Landform: Mountains

Slope: 50 to 75 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—other perennial forbs

Site index: California red fir—20

Site index: Lodgepole pine—67

Typical profile:

Surface rock fragments: About 15 percent fine gravel, 10 percent gravel, 10 percent cobbles, 25 percent stones

Layer 1—0 to 10 inches; very gravelly loamy coarse sand

Layer 2—10 to 16 inches; gravelly coarse sand

Layer 3—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 8 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.8 inch

Present flooding: None

Present ponding: None

Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 8

Ecological site: F022AY121NV

Component Description**Dagget and similar soils**

Landform: Mountains

Slope: 30 to 50 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Red fir - western white pine forest with pinemat manzanita in the understory.

Site index: California red fir—29

Site index: Lodgepole pine—68

Typical profile:

Surface rock fragments: About 25 percent stones, 15 percent fine gravel, 10 percent gravel, 10 percent cobbles

Layer 1—0 to 8 inches; very gravelly loamy coarse sand

Layer 2—8 to 41 inches; very gravelly loamy coarse sand

Layer 3—41 to 51 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches

Saturated hydraulic conductivity class (root zone): Very high, (Permeability class: Rapid)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 7e-7

Ecological site: F022AY106NV

Component Description**Rock outcrop**

Landform: Peaks

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Toiyabe and similar soils**

Composition: 0 to 5 percent

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Corbett and similar soils

Composition: 0 to 4 percent

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Buggin and similar soils

Composition: 0 to 2 percent

Slope: 30 to 75 percent

Landform: Backslopes of mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, isotic Aquic Haplocryolls
 Slope: 8 to 30 percent
 Landform: Footslopes of mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—slender wheatgrass, Nevada
 bluegrass, other perennial forbs, Woods' rose, willow
 Ecological site: F022AY104NV

Chutes

Composition: 0 to 1 percent
 Slope: 75 to 150 percent
 Landform: Avalanche chutes
 Ecological site: None

Hopeval and similar soils

Composition: 0 to 1 percent
 Slope: 4 to 15 percent
 Landform: Flood plains
 Typical vegetation: Creeping bentgrass, sedge, tufted
 hairgrass, Baltic rush, bluegrass, other perennial
 grasses, other perennial forbs
 Ecological site: R022AY017NV—Semi-wet meadow

Waterpeak and similar soils

Composition: 0 to 1 percent
 Slope: 30 to 75 percent
 Landform: Shoulders of mountains
 Typical vegetation: Western needlegrass, mountain
 brome, other perennial forbs, mountain big
 sagebrush, antelope bitterbrush
 Ecological site: R022AY021NV—South slope 30+ P.Z.

Management

For information about managing this map unit, see the
 following sections and associated tables in this
 publication:

"Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

150—Mottskel very bouldery loamy coarse sand, 2 to 15 percent slopes

Map Unit Setting

MLRA: 26
 Landscape: Fan piedmont
 Elevation: 5,000 to 5,500
 Precipitation: 12 to 14 inches
 Air temperature: 46 to 50 degrees Fahrenheit
 Frost-free period: 80 to 90 days

Composition

Mottskel very bouldery loamy coarse sand, 4 to 15
 percent slopes—85 percent
 Oest bouldery sandy loam, 2 to 8 percent slopes—7
 percent
 Entic Haploxerolls very bouldery loamy coarse sand, 4 to
 15 percent slopes—6 percent
 Aquic Cumulic Haploxerolls very bouldery sandy loam, 4
 to 15 percent slopes—2 percent

Component Description

Mottskel and similar soils

Landform: Alluvial fans
 Slope: 4 to 15 percent
 Parent material: Alluvium from granodiorite
 Typical vegetation: Indian ricegrass, mountain big
 sagebrush, needleandthread, antelope bitterbrush

Typical profile:

Surface rock fragments: About 5 percent boulders, 20
 percent fine gravel, 10 percent gravel, 5 percent
 cobbles, 5 percent stones
 Layer 1—0 to 18 inches; very bouldery loamy coarse
 sand
 Layer 2—18 to 60 inches; very stony loamy coarse sand

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: Low
 Saturated hydraulic conductivity class (root zone): High,
 (Permeability class: Rapid)
 Available water capacity: About 4 inches
 Present flooding: Rare
 Present ponding: None
 Natural drainage class: Excessively drained

Interpretive Groups

Irrigated land capability: 4s
 Nonirrigated land capability: 6s
 Ecological site: R026XY008NV—Granitic fan 10-12 P.Z.

Typical soil descriptions including ranges in
 characteristics are in the "Classification of the Soils"
 section.

Contrasting Inclusions

Oest and similar soils

Composition: 0 to 7 percent
 Slope: 2 to 8 percent

Landform: Terraces

Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, bluegrass, other perennial forbs, antelope bitterbrush

Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Entic Haploxerolls and similar soils

Composition: 0 to 6 percent

Classification: Sandy-skeletal, mixed, mesic Entic Haploxerolls

Slope: 4 to 15 percent

Landform: Alluvial fans

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Aquic Cumulic Haploxerolls and similar soils

Composition: 0 to 2 percent

Classification: Sandy-skeletal, mixed, mesic Aquic Cumulic Haploxerolls

Slope: 4 to 15 percent

Landform: Alluvial fans

Typical vegetation: Forest canopy—quaking aspen Forest understory—slender wheatgrass, Nevada bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Crops and Pasture" section

"Engineering" and "Soil Properties" sections

160—Hopeval complex, 2 to 8 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountain valleys or canyons

Elevation: 7,000 to 10,000

Precipitation: 30 to 50 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Hopeval mucky loam, wet, 2 to 8 percent slopes—50 percent

Hopeval very fine sandy loam, 2 to 8 percent slopes—35 percent

Cavebear gravelly loam, 2 to 8 percent slopes—4 percent

Typic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—4 percent

Aquic Haplocryolls very bouldery sandy loam, 4 to 30 percent slopes—3 percent

Typic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—3 percent

Typic Cryaquents extremely gravelly coarse sand, 2 to 8 percent slopes—1 percent

Component Description

Hopeval and similar soils

Landform: Flood plains

Slope: 2 to 8 percent

Parent material: Alluvium and outwash derived from mixed rock sources

Typical vegetation: Nebraska sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses

Typical profile:

Layer 1—0 to 5 inches; mucky loam

Layer 2—5 to 12 inches; loam

Layer 3—12 to 15 inches; loam

Layer 4—15 to 26 inches; stratified fine sand to sandy loam

Layer 5—26 to 33 inches; stratified gravelly coarse sand to fine sandy loam

Layer 6—33 to 60 inches; stratified very gravelly coarse sand to loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 7 inches

Present flooding: Occasional

Present ponding: None

Water table: Present

Natural drainage class: Very poorly drained

Interpretive Groups

Nonirrigated land capability: 6w

Ecological site: R022AY016NV—Wet meadow

Component Description

Hopeval and similar soils

Landform: Flood plains

Slope: 2 to 8 percent

Parent material: Alluvium and outwash derived from mixed rock sources

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Typical profile:

Layer 1—0 to 2 inches; very fine sandy loam

Layer 2—2 to 12 inches; loam

Layer 3—12 to 15 inches; loam

Layer 4—15 to 26 inches; stratified fine sand to sandy loam

Layer 5—26 to 33 inches; stratified gravelly coarse sand to fine sandy loam

Layer 6—33 to 60 inches; stratified very gravelly coarse sand to loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: Occasional

Present ponding: None

Water table: Present

Natural drainage class: Poorly drained

Interpretive Groups

Nonirrigated land capability: 6w

Ecological site: R022AY017NV—Semi-wet meadow

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Cavebear and similar soils

Composition: 0 to 4 percent

Slope: 2 to 8 percent

Landform: Stream terraces

Typical vegetation: Douglas' sedge, threadleaf sedge, Baltic rush, mat muhly, big bluegrass, other perennial forbs, clover

Ecological site: R022AY018NV—Dry meadow

Typic Cryaquolls and similar soils

Composition: 0 to 4 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 2 to 8 percent

Landform: Flood plains

Typical vegetation: Sedge, tufted hairgrass, Kentucky bluegrass, other perennial forbs, willow

Ecological site: R022AY033NV—Wet willow

Aquic Haplocryolls and similar soils

Composition: 0 to 3 percent

Classification: Loamy-skeletal, isotic Aquic Haplocryolls

Slope: 4 to 30 percent

Landform: Footslopes of moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada

bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Typic Cryaquolls and similar soils

Composition: 0 to 3 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 2 to 8 percent

Landform: Flood plains

Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

Typic Cryaquents and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed Typic Cryaquents

Slope: 2 to 8 percent

Landform: Bars

Typical vegetation: Creeping wildrye, Kentucky

bluegrass, other perennial grasses, other perennial forbs, willow

Ecological site: R022AY019NV—Gravel bar

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

162—Hopeval-Corralval complex, 0 to 4 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountain valleys or canyons, upland

Elevation: 8,000 to 9,500

Precipitation: 30 to 45 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Hopeval very fine sandy loam, 0 to 8 percent slopes—45 percent

Corralval very gravelly coarse sandy loam, 0 to 8 percent slopes—45 percent

Hopeval mucky loam, wet, 0 to 8 percent slopes—4 percent

Typic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—3 percent

Waterpeak gravelly loamy coarse sand, moist, 4 to 15 percent slopes—3 percent

Component Description

Corralval and similar soils

Landform: Stream terraces

Slope: 0 to 8 percent

Parent material: Alluvium from mixed rock sources

Typical vegetation: Mountain silver sagebrush, sedge, mat muhly, bluegrass, other perennial forbs, groundsel

Typical profile:

Surface rock fragments: About 25 percent gravel

Layer 1—0 to 3 inches; very gravelly coarse sandy loam

Layer 2—3 to 20 inches; very gravelly coarse sandy loam

Layer 3—20 to 26 inches; gravelly coarse sandy loam

Layer 4—26 to 45 inches; very cobbly coarse sandy loam

Layer 5—45 to 60 inches; very cobbly loamy coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 5 inches

Present flooding: Rare

Present ponding: None

Water table: Present

Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY054NV—Moist mountain basin

Component Description

Hopeval and similar soils

Landform: Dissected plains

Slope: 0 to 8 percent

Parent material: Alluvium and outwash derived from mixed rock sources

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Typical profile:

Layer 1—0 to 2 inches; very fine sandy loam

Layer 2—2 to 12 inches; loam

Layer 3—12 to 15 inches; loam

Layer 4—15 to 26 inches; stratified fine sand to sandy loam

Layer 5—26 to 33 inches; stratified gravelly coarse sand to fine sandy loam

Layer 6—33 to 60 inches; stratified very gravelly coarse sand to loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: Occasional

Present ponding: None

Water table: Present

Natural drainage class: Poorly drained

Interpretive Groups

Nonirrigated land capability: 6w

Ecological site: R022AY017NV—Semi-wet meadow

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Hopeval and similar soils

Composition: 0 to 4 percent

Slope: 0 to 8 percent

Landform: Swales

Typical vegetation: Nebraska sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses

Ecological site: R022AY016NV—Wet meadow

Typic Cryaquolls and similar soils

Composition: 0 to 3 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls
 Slope: 2 to 8 percent
 Landform: Flood plains
 Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow
 Ecological site: R022AY034NV—Moist willow

Waterpeak and similar soils

Composition: 0 to 3 percent
 Slope: 4 to 15 percent
 Landform: Mountains
 Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush
 Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

170—Burnlake-Roadcat association

Map Unit Setting

MLRA: 22A
 Landscape: Mountain valleys or canyons
 Elevation: 7,000 to 8,000
 Precipitation: 30 to 45 inches
 Air temperature: 39 to 45 degrees Fahrenheit
 Frost-free period: 40 to 70 days

Composition

Burnlake extremely gravelly sandy loam, 8 to 30 percent slopes—60 percent
 Roadcat extremely gravelly loamy coarse sand, 4 to 30 percent slopes—25 percent
 Hardtil gravelly loamy coarse sand, 8 to 30 percent slopes—4 percent
 Typic Haploxerepts very bouldery loamy coarse sand, 4 to 30 percent slopes—2 percent
 Cumulic Cryaquolls very bouldery sandy loam, 8 to 30 percent slopes—2 percent
 Stumpatil very gravelly coarse sandy loam, 8 to 30 percent slopes—2 percent
 Aquic Haplocryolls very bouldery sandy loam, 4 to 30 percent slopes—2 percent
 Aspetill very gravelly sandy loam, 8 to 30 percent slopes—2 percent
 Rock outcrop—1 percent

Component Description

Burnlake and similar soils

Landform: Moraines
 Slope: 8 to 30 percent
 Parent material: Till derived from mixed rock sources
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
 Site index: Jeffrey pine—75

Typical profile:

Surface rock fragments: About 5 percent boulders, 5 percent stones, 5 percent cobbles, 45 percent gravel
 Layer 1—0 to 2 inches; extremely gravelly sandy loam
 Layer 2—2 to 17 inches; extremely gravelly sandy loam
 Layer 3—17 to 26 inches; extremely gravelly coarse sandy loam
 Layer 4—26 to 60 inches; extremely gravelly loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F022AY116NV

Component Description

Roadcat and similar soils

Landform: Moraines
 Slope: 4 to 30 percent
 Parent material: Till derived from mixed rock sources
 Typical vegetation: Forest canopy—lodgepole pine Forest understory—mountain big sagebrush
 Site index: Lodgepole pine—53

Typical profile:

Surface rock fragments: About 20 percent fine gravel, 15 percent gravel, 5 percent cobbles, 5 percent stones, 5 percent boulders
 Layer 1—0 to 8 inches; extremely gravelly loamy coarse sand
 Layer 2—8 to 19 inches; extremely gravelly coarse sandy loam

Layer 3—19 to 36 inches; extremely gravelly loamy coarse sand

Layer 4—36 to 60 inches; extremely gravelly loamy coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY102NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Hardtil and similar soils

Composition: 0 to 4 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—mountain big sagebrush

Ecological site: F022AY102NV

Aquic Haplocryolls and similar soils

Composition: 0 to 2 percent

Classification: Loamy-skeletal, isotic Aquic Haplocryolls

Slope: 4 to 30 percent

Landform: Footslopes of moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada

bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Aspetill and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender

wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Cumulic Cryaquolls and similar soils

Composition: 0 to 2 percent

Classification: Loamy-skeletal, isotic Cumulic Cryaquolls

Slope: 8 to 30 percent

Landform: Footslopes of moraines

Typical vegetation: Creeping bentgrass, sedge, tufted

hairgrass, Baltic rush, bluegrass, other perennial

grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Stumpatil and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—California red fir,

lodgepole pine Forest understory—western

needlegrass, mountain big sagebrush, mountain

brome, lupine, currant, wild mint, snowberry

Ecological site: F022AY118NV

Typic Haploxerepts and similar soils

Composition: 0 to 2 percent

Classification: Sandy-skeletal, mixed, frigid Typic

Haploxerepts

Slope: 4 to 30 percent

Landform: Moraines

Typical vegetation: Western needlegrass, mountain big

sagebrush, sedge, bluegrass

Ecological site: R022AY013NV—Gravelly outwash

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

171—Stumpatil-Morscour association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 9,000

Precipitation: 35 to 55 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Stumpatil very gravelly coarse sandy loam, 8 to 30 percent slopes—65 percent
 Morscour extremely gravelly sandy loam, 8 to 30 percent slopes—20 percent
 Florand very gravelly peaty sandy loam, 15 to 50 percent slopes—4 percent
 Lostridge very gravelly coarse sandy loam, 8 to 30 percent slopes—3 percent
 Lithnip extremely gravelly sandy loam, 15 to 50 percent slopes—2 percent
 Burnlake extremely gravelly sandy loam, 8 to 30 percent slopes—2 percent
 Aquic Haplocryolls very bouldery sandy loam, 4 to 30 percent slopes—2 percent
 Hopeval mucky loam, wet, 4 to 15 percent slopes—1 percent
 Rock outcrop—1 percent

Component Description

Stumpatil and similar soils

Landform: Moraines
 Slope: 8 to 30 percent
 Parent material: Till derived from mixed rock sources
 Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry
 Site index: California red fir—29
 Site index: Lodgepole pine—52

Typical profile:

Surface rock fragments: About 35 percent gravel, 5 percent stones, 5 percent boulders
 Layer 1—0 to 6 inches; very gravelly coarse sandy loam
 Layer 2—6 to 11 inches; very gravelly coarse sandy loam
 Layer 3—11 to 26 inches; very gravelly coarse sandy loam
 Layer 4—26 to 33 inches; very gravelly sandy loam
 Layer 5—33 to 60 inches; very gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 4 inches

Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F022AY118NV

Component Description

Morscour and similar soils

Landform: Mountains
 Slope: 8 to 30 percent
 Parent material: Residuum derived from andesite or tuff breccia
 Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush, snowberry

Typical profile:

Surface rock fragments: About 5 percent boulders, 5 percent stones, 10 percent cobbles, 35 percent gravel
 Layer 1—0 to 2 inches; extremely gravelly sandy loam
 Layer 2—2 to 7 inches; very gravelly sandy loam
 Layer 3—7 to 14 inches; bedrock
 Layer 4—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (paralithic): 4 to 10 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 0.6 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: R022AY038NV—Shallow loam 30+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Florand and similar soils

Composition: 0 to 4 percent

Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry
 Ecological site: F022AY118NV

Lostridge and similar soils

Composition: 0 to 3 percent
 Slope: 8 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—mountain big sagebrush, currant, snowberry
 Ecological site: F022AY105NV

Aquic Haplocryolls and similar soils

Composition: 0 to 2 percent
 Classification: Loamy-skeletal, isotic Aquic Haplocryolls
 Slope: 4 to 30 percent
 Landform: Footslopes of moraines
 Typical vegetation: Forest canopy—quaking aspen Forest understory—slender wheatgrass, Nevada bluegrass, other perennial forbs, Woods' rose, willow
 Ecological site: F022AY104NV

Burnlake and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Moraines
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
 Ecological site: F022AY116NV

Lithnip and similar soils

Composition: 0 to 2 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Indian ricegrass, western needlegrass, bluegrass, eriogonum, lupine, wild mint, goldenweed, mulesears wyethia
 Ecological site: R022AY012NV—Barren slope 20+ P.Z.

Hopeval and similar soils

Composition: 0 to 1 percent
 Slope: 4 to 15 percent
 Landform: Flood plains
 Typical vegetation: Nebraska sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses
 Ecological site: R022AY016NV—Wet meadow

Rock outcrop

Composition: 0 to 1 percent
 Landform: Mountains
 Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

172—Stumpatil very gravelly sandy loam, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 8,000 to 9,000
 Precipitation: 30 to 50 inches
 Air temperature: 36 to 39 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Stumpatil very gravelly coarse sandy loam, dry, 30 to 50 percent slopes—85 percent
 Dunderberg very gravelly ashy sandy loam, warm, 15 to 50 percent slopes—4 percent
 Stumpatil very gravelly coarse sandy loam, dry, 4 to 15 percent slopes—3 percent
 Aspetill very gravelly sandy loam, 8 to 30 percent slopes—2 percent
 Temo very gravelly loamy coarse sand, dry, 8 to 50 percent slopes—1 percent
 Rock outcrop—1 percent
 Cumulic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—1 percent
 Typic Cryaquolls very gravelly sandy loam, 4 to 15 percent slopes—1 percent
 Lostridge very gravelly coarse sandy loam, dry, 15 to 50 percent slopes—1 percent
 Corralval very gravelly coarse sandy loam, 2 to 8 percent slopes—1 percent

Component Description

Stumpatil and similar soils

Landform: Moraines
 Slope: 30 to 50 percent
 Parent material: Till derived from mixed rock sources

Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain
 big sagebrush, currant, snowberry
 Site index: Lodgepole pine—35

Typical profile:

Surface rock fragments: About 35 percent gravel, 5
 percent stones, 5 percent boulders
 Layer 1—0 to 6 inches; very gravelly coarse sandy loam
 Layer 2—6 to 11 inches; very gravelly coarse sandy
 loam
 Layer 3—11 to 26 inches; very gravelly coarse sandy
 loam
 Layer 4—26 to 33 inches; very gravelly sandy loam
 Layer 5—33 to 60 inches; very gravelly sandy loam

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: High
 Saturated hydraulic conductivity class (root zone):
 Moderately High, (Permeability class: Moderate)
 Available water capacity: About 4 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F022AY127NV

Typical soil descriptions including ranges in
 characteristics are in the "Classification of the Soils"
 section.

Contrasting Inclusions

Dunderberg and similar soils

Composition: 0 to 4 percent
 Slope: 15 to 50 percent
 Landform: Moraines
 Typical vegetation: Western needlegrass, mountain
 brome, other perennial forbs, mountain big
 sagebrush, antelope bitterbrush
 Ecological site: R022AY021NV—South slope 30+ P.Z.

Stumpatil and similar soils

Composition: 0 to 3 percent
 Slope: 4 to 15 percent
 Landform: Moraines

Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain
 big sagebrush, currant, snowberry
 Ecological site: F022AY127NV

Aspetill and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Moraines
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender
 wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Corralval and similar soils

Composition: 0 to 1 percent
 Slope: 2 to 8 percent
 Landform: Stream terraces
 Typical vegetation: Mountain silver sagebrush, sedge,
 mat muhly, bluegrass, other perennial forbs,
 groundsel
 Ecological site: R022AY054NV—Moist mountain basin

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent
 Classification: Coarse-loamy, mixed, superactive
 Cumulic Cryaquolls
 Slope: 2 to 8 percent
 Landform: Dissected plains
 Typical vegetation: Creeping bentgrass, sedge, tufted
 hairgrass, Baltic rush, bluegrass, other perennial
 grasses, other perennial forbs
 Ecological site: R022AY017NV—Semi-wet meadow

Lostridge and similar soils

Composition: 0 to 1 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain
 big sagebrush, currant, snowberry
 Ecological site: F022AY127NV

Rock outcrop

Composition: 0 to 1 percent
 Landform: Peaks
 Ecological site: None

Temo and similar soils

Composition: 0 to 1 percent
 Slope: 8 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain
big sagebrush, currant, snowberry

Ecological site: F022AY127NV

Typic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 4 to 15 percent

Landform: Flood plains

Typical vegetation: Sedge, slender wheatgrass,
bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

Management

For information about managing this map unit, see the
following sections and associated tables in this
publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

173—Stumpatil very gravelly sandy loam, 8 to 30 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountain valleys or canyons

Elevation: 8,000 to 9,000

Precipitation: 30 to 50 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Stumpatil very gravelly coarse sandy loam, dry, 8 to 30
percent slopes—85 percent

Dunderberg very gravelly ashy sandy loam, moist, 8 to
30 percent slopes—6 percent

Aspetill very gravelly sandy loam, 8 to 30 percent
slopes—2 percent

Corralval very gravelly coarse sandy loam, 2 to 8
percent slopes—2 percent

Typic Cryaquolls very gravelly sandy loam, 4 to 15
percent slopes—2 percent

Cumulic Cryaquolls very fine sandy loam, 2 to 8 percent
slopes—1 percent

Rock outcrop—1 percent

Stumpatil very gravelly coarse sandy loam, 8 to 30
percent slopes—1 percent

Component Description

Stumpatil and similar soils

Landform: Moraines

Slope: 8 to 30 percent

Parent material: Till derived from mixed rock sources

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain
big sagebrush, currant, snowberry

Site index: Lodgepole pine—35

Typical profile:

Surface rock fragments: About 35 percent gravel, 5
percent stones, 5 percent boulders

Layer 1—0 to 6 inches; very gravelly coarse sandy loam

Layer 2—6 to 11 inches; very gravelly coarse sandy
loam

Layer 3—11 to 26 inches; very gravelly coarse sandy
loam

Layer 4—26 to 33 inches; very gravelly sandy loam

Layer 5—33 to 60 inches; very gravelly sandy loam

See "Chemical Properties of Soils" table and the
"Physical Properties of Soils" table for more
information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY127NV

Typical soil descriptions including ranges in
characteristics are in the "Classification of the Soils"
section.

Contrasting Inclusions

Dunderberg and similar soils

Composition: 0 to 6 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Western needlegrass, mountain
brome, melic, other perennial forbs, mountain big
sagebrush

Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Aspetill and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Corralval and similar soils

Composition: 0 to 2 percent

Slope: 2 to 8 percent

Landform: Stream terraces

Typical vegetation: Mountain silver sagebrush, sedge, mat muhly, bluegrass, other perennial forbs, groundsel

Ecological site: R022AY054NV—Moist mountain basin

Typic Cryaquolls and similar soils

Composition: 0 to 2 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 4 to 15 percent

Landform: Flood plains

Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls

Slope: 2 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Rock outcrop

Composition: 0 to 1 percent

Landform: Peaks

Ecological site: None

Stumpatil and similar soils

Composition: 0 to 1 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry

Ecological site: F022AY118NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

174—Stumpatil-Sonorapass-Snowtell association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 9,500

Precipitation: 30 to 50 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Stumpatil very gravelly coarse sandy loam, dry, 8 to 30 percent slopes—35 percent

Sonorapass very gravelly coarse sandy loam, 8 to 30 percent slopes—30 percent

Snowtell very gravelly coarse sandy loam, 8 to 30 percent slopes—20 percent

Rock outcrop—9 percent

Dunderberg very gravelly ashy sandy loam, moist, 8 to 30 percent slopes—3 percent

Aspetill very gravelly sandy loam, 8 to 30 percent slopes—1 percent

Cumulic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—1 percent

Typic Cryaquolls very gravelly sandy loam, 4 to 15 percent slopes—1 percent

Component Description

Stumpatil and similar soils

Landform: Moraines

Slope: 8 to 30 percent

Parent material: Till derived from mixed rock sources

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry

Site index: Lodgepole pine—35

Typical profile:

Surface rock fragments: About 35 percent gravel, 5 percent stones, 5 percent boulders

Layer 1—0 to 6 inches; very gravelly coarse sandy loam

Layer 2—6 to 11 inches; very gravelly coarse sandy loam
 Layer 3—11 to 26 inches; very gravelly coarse sandy loam
 Layer 4—26 to 33 inches; very gravelly sandy loam
 Layer 5—33 to 60 inches; very gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 4 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F022AY127NV

Component Description

Sonorapass and similar soils

Landform: Mountains
 Slope: 8 to 30 percent
 Parent material: Till from mixed rock sources
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry
 Site index: Lodgepole pine—35

Typical profile:

Surface rock fragments: About 25 percent subrounded gravel, 5 percent subrounded stones, 5 percent subrounded boulders, 5 percent subrounded cobbles
 Layer 1—0 to 8 inches; very gravelly coarse sandy loam
 Layer 2—8 to 17 inches; extremely cobbly coarse sandy loam
 Layer 3—17 to 21 inches; extremely gravelly coarse sandy loam
 Layer 4—21 to 31 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 1.4 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: F022AY127NV

Component Description

Snowtell and similar soils

Landform: Mountains
 Slope: 8 to 30 percent
 Parent material: Till from mixed rock sources
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry
 Site index: Lodgepole pine—20

Typical profile:

Surface rock fragments: 35 percent subrounded gravel, 5 percent subrounded cobbles, 5 percent subrounded stones, 5 percent subrounded boulders
 Layer 1—0 to 3 inches; very gravelly coarse sandy loam
 Layer 2—3 to 10 inches; very gravelly coarse sandy loam
 Layer 3—10 to 20 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 4 to 10 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 0.8 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: F022AY127NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Rock outcrop**

Composition: 0 to 9 percent

Landform: Peaks

Ecological site: None

Dunderberg and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush

Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Aspetill and similar soils

Composition: 0 to 1 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive

Cumulic Cryaquolls

Slope: 2 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted

hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Typic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 4 to 15 percent

Landform: Flood plains

Typical vegetation: Sedge, slender wheatgrass,

bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

180—Shalgran-Rock outcrop complex, 30 to 75 percent slopes***Map Unit Setting***

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 9,000

Precipitation: 35 to 55 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Shalgran very bouldery coarse sand, 30 to 75 percent slopes—70 percent

Rock outcrop—15 percent

Sofgran gravelly loamy coarse sand, 30 to 50 percent slopes—6 percent

Dystic Xerorthents extremely bouldery coarse sand, 30 to 75 percent slopes—3 percent

Jobsis very gravelly loamy coarse sand, cool, 30 to 75 percent slopes—2 percent

Burnlake extremely gravelly sandy loam, 15 to 50 percent slopes—2 percent

Temo very gravelly loamy coarse sand, 30 to 75 percent slopes—2 percent

Component Description**Shalgran and similar soils**

Landform: South facing mountains

Slope: 30 to 75 percent, south aspect

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, pinemat manzanita, snowbrush ceanothus, Sierra chinkapin, snowberry

Site index: Jeffrey pine—56

Typical profile:

Surface rock fragments: About 15 percent fine gravel, 10 percent gravel, 5 percent stones, 15 percent boulders

Layer 1—0 to 3 inches; very bouldery coarse sand

Layer 2—3 to 14 inches; very bouldery coarse sand

Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone): High,
(Permeability class: Rapid)
Available water capacity: About 0.8 inch
Present flooding: None
Present ponding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7s
Ecological site: F022AY120NV

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Sofgran and similar soils

Composition: 0 to 6 percent
Slope: 30 to 50 percent, east aspect
Landform: East facing backslopes of mountains
Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—wild mint, western needlegrass, pinemat manzanita, lupine
Ecological site: F022AY106NV

Dystric Xerorthents and similar soils

Composition: 0 to 3 percent
Classification: Sandy-skeletal, mixed, frigid Dystric Xerorthents
Slope: 30 to 75 percent, south aspect
Landform: South facing mountains
Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, pinemat manzanita, snowbrush ceanothus, Sierra chinkapin, snowberry
Ecological site: F022AY120NV

Burnlake and similar soils

Composition: 0 to 2 percent
Slope: 15 to 50 percent
Landform: Moraines
Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
Ecological site: F022AY116NV

Jobsis and similar soils

Composition: 0 to 2 percent
Slope: 30 to 75 percent
Landform: Mountains
Typical vegetation: Forest canopy—whitebark pine
Forest understory—other perennial forbs
Ecological site: F022AY134NV

Temo and similar soils

Composition: 0 to 2 percent
Slope: 30 to 75 percent
Landform: Mountains
Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—other perennial forbs
Ecological site: F022AY121NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
"Range" section
"Forest land" section
"Engineering" and "Soil Properties" sections

190—Hopeval complex, 0 to 2 percent slopes

Map Unit Setting

MLRA: 22A
Landscape: Mountain valleys or canyons
Elevation: 7,000 to 10,000
Precipitation: 30 to 45 inches
Air temperature: 36 to 39 degrees Fahrenheit
Frost-free period: 30 to 60 days

Composition

Hopeval very fine sandy loam, 0 to 2 percent slopes—50 percent
Hopeval mucky loam, wet, 0 to 2 percent slopes—35 percent
Hopeval mucky loam, wet, 0 to 2 percent slopes—5 percent
Typic Cryaquents extremely gravelly coarse sand, 0 to 2 percent slopes—4 percent
Ultic Haploxerolls extremely gravelly sandy loam, 2 to 8 percent slopes—3 percent
Typic Cryaquolls very fine sandy loam, 0 to 2 percent slopes—2 percent
Aquic Haplocryolls very bouldery sandy loam, 0 to 8 percent slopes—1 percent

Component Description**Hopeval and similar soils**

Landform: Flood plains

Slope: 0 to 2 percent

Parent material: Alluvium and outwash derived from mixed rock sources

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Typical profile:

Layer 1—0 to 2 inches; very fine sandy loam

Layer 2—2 to 12 inches; loam

Layer 3—12 to 15 inches; loam

Layer 4—15 to 26 inches; stratified fine sand to sandy loam

Layer 5—26 to 33 inches; stratified gravelly coarse sand to fine sandy loam

Layer 6—33 to 60 inches; stratified very gravelly coarse sand to loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: Occasional

Present ponding: None

Water table: Present

Natural drainage class: Poorly drained

Interpretive Groups

Nonirrigated land capability: 5w

Ecological site: R022AY017NV—Semi-wet meadow

Component Description**Hopeval and similar soils**

Landform: Flood plains

Slope: 0 to 2 percent

Parent material: Alluvium and outwash derived from mixed rock sources

Typical vegetation: Nebraska sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses

Typical profile:

Layer 1—0 to 5 inches; mucky loam

Layer 2—5 to 12 inches; loam

Layer 3—12 to 15 inches; loam

Layer 4—15 to 26 inches; stratified fine sand to sandy loam

Layer 5—26 to 33 inches; stratified gravelly coarse sand to fine sandy loam

Layer 6—33 to 60 inches; stratified very gravelly coarse sand to loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 7 inches

Present flooding: Occasional

Present ponding: None

Water table: Present

Natural drainage class: Very poorly drained

Interpretive Groups

Nonirrigated land capability: 5w

Ecological site: R022AY016NV—Wet meadow

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Hopeval and similar soils**

Composition: 0 to 5 percent

Slope: 0 to 2 percent

Landform: Flood plains

Typical vegetation: Baltic rush, Nebraska sedge, tufted hairgrass, other perennial forbs, other perennial grasses

Ecological site: R022AY016NV—Wet meadow

Typic Cryaquents and similar soils

Composition: 0 to 4 percent

Classification: Sandy-skeletal, mixed Typic Cryaquents

Slope: 0 to 2 percent

Landform: Flood plains

Typical vegetation: Creeping wildrye, Kentucky bluegrass, other perennial grasses, other perennial forbs, willow

Ecological site: R022AY019NV—Gravel bar

Ultic Haploxerolls and similar soils

Composition: 0 to 3 percent

Classification: Loamy-skeletal, isotic, frigid Ultic Haploxerolls

Slope: 2 to 8 percent
 Landform: Stream terraces
 Typical vegetation: Western needlegrass, mountain big sagebrush, sedge, bluegrass
 Ecological site: R022AY013NV—Gravelly outwash

Typic Cryaquolls and similar soils

Composition: 0 to 2 percent
 Classification: Sandy-skeletal, mixed Typic Cryaquolls
 Slope: 0 to 2 percent
 Landform: Flood plains
 Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow
 Ecological site: R022AY034NV—Moist willow

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent
 Classification: Loamy-skeletal, isotic Aquic Haplocryolls
 Slope: 0 to 8 percent
 Landform: Foothills of mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—slender wheatgrass, Nevada bluegrass, other perennial forbs, Woods' rose, willow
 Ecological site: F022AY104NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

200—Cavebear-Hopeval complex, 2 to 8 percent slopes

Map Unit Setting

MLRA: 22A
 Landscape: Mountain valleys or canyons
 Elevation: 7,000 to 8,000
 Precipitation: 30 to 45 inches
 Air temperature: 36 to 39 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Cavebear gravelly loam, 2 to 8 percent slopes—35 percent
 Hopeval very fine sandy loam, 2 to 8 percent slopes—25 percent
 Hopeval mucky loam, wet, 2 to 8 percent slopes—20 percent
 Ultic Haploxerolls extremely gravelly sandy loam, 2 to 8 percent slopes—10 percent

Aquic Haplocryolls very bouldery sandy loam, 4 to 15 percent slopes—5 percent
 Ultic Haploxerolls very bouldery sandy loam, 8 to 30 percent slopes—5 percent

Component Description

Cavebear and similar soils

Landform: Stream terraces
 Slope: 2 to 8 percent
 Parent material: Alluvium from mixed rock sources
 Typical vegetation: Douglas' sedge, threadleaf sedge, Baltic rush, mat muhly, big bluegrass, other perennial forbs, clover

Typical profile:

Surface rock fragments: About 15 percent gravel
 Layer 1—0 to 4 inches; gravelly loam
 Layer 2—4 to 20 inches; gravelly sandy loam
 Layer 3—20 to 60 inches; extremely gravelly coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 4 inches
 Present flooding: Rare
 Present ponding: None
 Water table: Present
 Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 6e
 Ecological site: R022AY018NV—Dry meadow

Component Description

Hopeval and similar soils

Landform: Stream terraces
 Slope: 2 to 8 percent
 Parent material: Alluvium and outwash derived from mixed rock sources
 Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Typical profile:

Layer 1—0 to 2 inches; very fine sandy loam
 Layer 2—2 to 12 inches; loam
 Layer 3—12 to 15 inches; loam

Layer 4—15 to 26 inches; stratified fine sand to sandy loam
 Layer 5—26 to 33 inches; stratified gravelly coarse sand to fine sandy loam
 Layer 6—33 to 60 inches; stratified very gravelly coarse sand to loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Saturated hydraulic conductivity class (root zone):
 Moderately High, (Permeability class: Moderate)
 Available water capacity: About 6 inches
 Present flooding: Occasional
 Present ponding: None
 Water table: Present
 Natural drainage class: Poorly drained

Interpretive Groups

Nonirrigated land capability: 6w
 Ecological site: R022AY017NV—Semi-wet meadow

Component Description

Hopeval and similar soils

Landform: Stream terraces
 Slope: 2 to 8 percent
 Parent material: Alluvium and outwash derived from mixed rocks sources
 Typical vegetation: Nebraska sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses

Typical profile:

Layer 1—0 to 5 inches; mucky loam
 Layer 2—5 to 12 inches; loam
 Layer 3—12 to 15 inches; loam
 Layer 4—15 to 26 inches; stratified fine sand to sandy loam
 Layer 5—26 to 33 inches; stratified gravelly coarse sand to fine sandy loam
 Layer 6—33 to 60 inches; stratified very gravelly coarse sand to loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Saturated hydraulic conductivity class (root zone):
 Moderately High, (Permeability class: Moderate)
 Available water capacity: About 7 inches
 Present flooding: Occasional
 Present ponding: None
 Water table: Present
 Natural drainage class: Very poorly drained

Interpretive Groups

Nonirrigated land capability: 6w
 Ecological site: R022AY016NV—Wet meadow

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ultic Haploxerolls and similar soils

Composition: 0 to 10 percent
 Classification: Sandy-skeletal, mixed, frigid Ultic Haploxerolls
 Slope: 2 to 8 percent
 Landform: Moraines
 Typical vegetation: Western needlegrass, mountain big sagebrush, sedge, bluegrass
 Ecological site: R022AY013NV—Gravelly outwash

Aquic Haplocryolls and similar soils

Composition: 0 to 5 percent
 Classification: Loamy-skeletal, isotic Aquic Haplocryolls
 Slope: 4 to 15 percent
 Landform: Footslopes of moraines
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—slender wheatgrass, Nevada bluegrass, other perennial forbs, Woods' rose, willow
 Ecological site: F022AY104NV

Ultic Haploxerolls and similar soils

Composition: 0 to 5 percent
 Classification: Sandy-skeletal, mixed, frigid Ultic Haploxerolls
 Slope: 8 to 30 percent
 Landform: Moraines
 Typical vegetation: Western needlegrass, mountain big sagebrush, sedge, bluegrass
 Ecological site: R022AY013NV—Gravelly outwash

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Forest land" section

"Engineering" and "Soil Properties" sections

210—Waterpeak-Rock outcrop complex, 30 to 75 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 10,000

Precipitation: 35 to 45 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Waterpeak very bouldery coarse sand, 30 to 75 percent slopes—80 percent

Rock outcrop—10 percent

Typic Cryorthents extremely bouldery loamy coarse sand, 15 to 50 percent slopes—4 percent

Shalgran very bouldery coarse sand, 30 to 75 percent slopes—4 percent

Pachic Haplocryolls very bouldery coarse sand, 30 to 75 percent slopes—2 percent

Component Description

Waterpeak and similar soils

Landform: Mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 15 percent fine gravel, 10 percent gravel, 5 percent stones, 5 percent boulders

Layer 1—0 to 5 inches; very bouldery coarse sand

Layer 2—5 to 18 inches; very stony coarse sand

Layer 3—18 to 27 inches; very stony loamy coarse sand

Layer 4—27 to 60 inches; very stony sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY021NV—South slope 30+ P.Z.

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Shalgran and similar soils

Composition: 0 to 4 percent

Slope: 30 to 75 percent, south aspect

Landform: South facing mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, pinemat manzanita, snowbrush ceanothus, Sierra chinkapin, snowberry

Ecological site: F022AY120NV

Typic Cryorthents and similar soils

Composition: 0 to 4 percent

Classification: Sandy-skeletal, mixed Typic Cryorthents

Slope: 15 to 50 percent

Landform: Shoulders of mountains

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Pachic Haplocryolls and similar soils

Composition: 0 to 2 percent

Classification: Sandy-skeletal, mixed Pachic Haplocryolls

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Western needlegrass, mountain brome, muttongrass, other perennial grasses, other perennial forbs, mountain big sagebrush, bitter cherry, common chokecherry, snowberry

Ecological site: R022AY020NV—Prunus pocket

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

211—Waterpeak-Buggin-Rock outcrop association**Map Unit Setting**

MLRA: 22A
 Landscape: Mountains
 Elevation: 8,000 to 11,000
 Precipitation: 30 to 45 inches
 Air temperature: 36 to 39 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Waterpeak very bouldery coarse sand, 15 to 50 percent slopes—50 percent
 Buggin extremely bouldery loamy coarse sand, 8 to 30 percent slopes—25 percent
 Rock outcrop—10 percent
 Waterpeak very bouldery coarse sand, moist, 15 to 50 percent slopes—5 percent
 Buggin extremely bouldery loamy coarse sand, moist, 8 to 30 percent slopes—5 percent
 Lostcannon very gravelly coarse sandy loam, 8 to 30 percent slopes—2 percent
 Temo very gravelly loamy coarse sand, dry, 15 to 50 percent slopes—2 percent
 Jobsis very gravelly loamy coarse sand, 15 to 50 percent slopes—1 percent

Component Description**Waterpeak and similar soils**

Landform: Mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Mountain big sagebrush, antelope bitterbrush, western needlegrass, mountain brome, other perennial forbs

Typical profile:

Surface rock fragments: About 10 percent gravel, 5 percent stones, 5 percent boulders, 15 percent fine gravel
 Layer 1—0 to 5 inches; very bouldery coarse sand
 Layer 2—5 to 18 inches; very stony coarse sand

Layer 3—18 to 27 inches; very stony loamy coarse sand
 Layer 4—27 to 60 inches; very stony sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
 Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 5 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R022AY021NV—South slope 30+ P.Z.

Component Description**Buggin and similar soils**

Landform: Backslopes of mountains
 Slope: 8 to 30 percent
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Typical profile:

Surface rock fragments: About 10 percent gravel, 9 percent stones, 5 percent cobbles, 20 percent fine gravel, 15 percent boulders
 Layer 1—0 to 2 inches; extremely bouldery loamy coarse sand
 Layer 2—2 to 7 inches; very gravelly loamy coarse sand
 Layer 3—7 to 10 inches; extremely gravelly coarse sandy loam
 Layer 4—10 to 16 inches; bedrock
 Layer 5—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Depth to restrictive feature: Bedrock (paralithic): 10 to 14 inches

Saturated hydraulic conductivity class (root zone): High,
(Permeability class: Rapid)
Available water capacity: About 0.6 inch
Present flooding: None
Present ponding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 8s
Ecological site: R022AY024NV—Mahogany Savanna

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Buggin and similar soils

Composition: 0 to 5 percent
Slope: 8 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Needlegrass, bluegrass, other perennial forbs, curleaf mountainmahogany, snowberry
Ecological site: R022AY025NV—Mahogany thicket

Waterpeak and similar soils

Composition: 0 to 5 percent
Slope: 15 to 50 percent
Landform: Mountains
Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush
Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Lostcannon and similar soils

Composition: 0 to 2 percent
Slope: 8 to 30 percent
Landform: Mountains
Typical vegetation: Forest canopy—quaking aspen
Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry
Ecological site: F022AY103NV

Temo and similar soils

Composition: 0 to 2 percent
Slope: 15 to 50 percent
Landform: Mountains

Typical vegetation: Forest canopy—lodgepole pine
Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry
Ecological site: F022AY127NV

Jobsis and similar soils

Composition: 0 to 1 percent
Slope: 15 to 50 percent
Landform: Mountains
Typical vegetation: Forest canopy—limber pine, whitebark pine
Forest understory—other perennial forbs
Ecological site: F022AY126NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

212—Waterpeak-Sofgran-Temo association

Map Unit Setting

MLRA: 22A
Landscape: Mountains
Elevation: 8,000 to 10,000
Precipitation: 35 to 45 inches
Air temperature: 36 to 39 degrees Fahrenheit
Frost-free period: 30 to 60 days

Composition

Waterpeak very bouldery coarse sand, moist, 4 to 30 percent slopes—45 percent
Sofgran gravelly loamy coarse sand, dry, 8 to 30 percent slopes—25 percent
Temo very gravelly loamy coarse sand, dry, 8 to 30 percent slopes—15 percent
Aquic Haplocryolls very bouldery sandy loam, 4 to 15 percent slopes—3 percent
Buggin extremely bouldery loamy coarse sand, 8 to 30 percent slopes—3 percent
Corralval very gravelly coarse sandy loam, 2 to 8 percent slopes—2 percent
Typic Cryaquolls very gravelly sandy loam, 4 to 15 percent slopes—2 percent
Lostcannon very gravelly coarse sandy loam, 8 to 30 percent slopes—2 percent
Cumulic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—1 percent
Rock outcrop—1 percent

Aquic Haplocryolls very gravelly sandy loam, 4 to 15 percent slopes—1 percent

Component Description

Waterpeak and similar soils

Landform: Mountains

Slope: 4 to 30 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush

Typical profile:

Surface rock fragments: About 10 percent gravel, 5 percent stones, 5 percent boulders, 15 percent fine gravel

Layer 1—0 to 5 inches; very bouldery coarse sand

Layer 2—5 to 18 inches; very stony coarse sand

Layer 3—18 to 27 inches; very stony loamy coarse sand

Layer 4—27 to 60 inches; very stony sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Component Description

Sofgran and similar soils

Landform: South facing backslopes of mountains

Slope: 8 to 30 percent, south aspect

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry

Site index: Lodgepole pine—35

Typical profile:

Surface rock fragments: About 15 percent fine gravel, 5 percent gravel, 5 percent cobbles, 1 percent stones, 3 percent boulders

Layer 1—0 to 3 inches; gravelly loamy coarse sand

Layer 2—3 to 6 inches; gravelly loamy coarse sand

Layer 3—6 to 9 inches; very gravelly loamy coarse sand

Layer 4—9 to 19 inches; very gravelly loamy coarse sand

Layer 5—19 to 27 inches; very gravelly coarse sand

Layer 6—27 to 45 inches; extremely gravelly loamy coarse sand

Layer 7—45 to 60 inches; very gravelly loamy coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 6e

Ecological site: F022AY127NV

Component Description

Temo and similar soils

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry

Site index: Lodgepole pine—20

Typical profile:

Surface rock fragments: About 20 percent fine gravel, 10 percent gravel, 5 percent cobbles, 5 percent stones, 5 percent boulders

Layer 1—0 to 10 inches; very gravelly loamy coarse sand

Layer 2—10 to 16 inches; gravelly coarse sand

Layer 3—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 8 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.8 inch

Present flooding: None

Present ponding: None

Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 8

Ecological site: F022AY127NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Aquic Haplocryolls and similar soils

Composition: 0 to 3 percent

Classification: Loamy-skeletal, isotic Aquic Haplocryolls

Slope: 4 to 15 percent

Landform: Foothills of moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Buggin and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Corralval and similar soils

Composition: 0 to 2 percent

Slope: 2 to 8 percent

Landform: Stream terraces

Typical vegetation: Mountain silver sagebrush, sedge, mat muhly, bluegrass, other perennial forbs, groundsel

Ecological site: R022AY054NV—Moist mountain basin

Lostcannon and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Typic Cryaquolls and similar soils

Composition: 0 to 2 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 4 to 15 percent

Landform: Flood plains

Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive Aquic Haplocryolls

Slope: 4 to 15 percent

Landform: Foothills of stream terraces

Typical vegetation: Forest canopy—quaking aspen

Forest understory—creeping wildrye, Woods' rose, willow, Kentucky bluegrass

Ecological site: R022AY015NV—Streambank

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive

Cumulic Cryaquolls

Slope: 2 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Rock outcrop

Composition: 0 to 1 percent

Landform: Peaks

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

220—Hardtil-Alpineco-Rock outcrop complex, 8 to 30 percent slopes

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 7,000 to 8,000
 Precipitation: 30 to 45 inches
 Air temperature: 39 to 45 degrees Fahrenheit
 Frost-free period: 40 to 70 days

Composition

Hardtil gravelly loamy coarse sand, 8 to 30 percent slopes—45 percent
 Alpineco very stony coarse sandy loam, 8 to 30 percent slopes—25 percent
 Rock outcrop—20 percent
 Burnlake extremely gravelly sandy loam, 8 to 30 percent slopes—7 percent
 Aquic Haplocryolls very bouldery sandy loam, 8 to 30 percent slopes—2 percent
 Hopeval mucky loam, wet, 0 to 8 percent slopes—1 percent

Component Description

Hardtil and similar soils

Landform: Mountains
 Slope: 8 to 30 percent
 Parent material: Till derived from mixed rock sources and colluvium from granodiorite
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—mountain big sagebrush
 Site index: Lodgepole pine—53

Typical profile:

Surface rock fragments: About 20 percent fine gravel, 15 percent gravel, 5 percent cobbles, 5 percent stones, 5 percent boulders
 Layer 1—0 to 3 inches; gravelly loamy coarse sand
 Layer 2—3 to 7 inches; very gravelly coarse sandy loam
 Layer 3—7 to 18 inches; very gravelly coarse sandy loam
 Layer 4—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 1.1 inches
 Present flooding: None
 Present ponding: None
 Water table: Present
 Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 7e
 Ecological site: F022AY102NV

Component Description

Alpineco and similar soils

Landform: Mountains
 Slope: 8 to 30 percent
 Parent material: Till derived from mixed rock sources and colluvium from granodiorite
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—mountain big sagebrush
 Site index: Lodgepole pine—53

Typical profile:

Surface rock fragments: About 5 percent boulders, 5 percent stones, 15 percent gravel
 Layer 1—0 to 3 inches; very stony coarse sandy loam
 Layer 2—3 to 12 inches; very stony coarse sandy loam
 Layer 3—12 to 22 inches; very stony coarse sandy loam
 Layer 4—22 to 27 inches; very stony coarse sandy loam
 Layer 5—27 to 49 inches; extremely stony coarse sandy loam
 Layer 6—49 to 59 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low
 Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 5 inches
 Present flooding: None
 Present ponding: None
 Water table: Present
 Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY102NV

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Nonirrigated land capability: Not determined

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Burnlake and similar soils

Composition: 0 to 7 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Aquic Haplocryolls and similar soils

Composition: 0 to 2 percent

Classification: Loamy-skeletal, isotic Aquic Haplocryolls

Slope: 8 to 30 percent

Landform: Footslopes of moraines

Typical vegetation: Forest canopy—quaking aspen Forest understory—slender wheatgrass, Nevada bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Hopeval and similar soils

Composition: 0 to 1 percent

Slope: 0 to 8 percent

Landform: Swales

Typical vegetation: Nebraska sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses

Ecological site: R022AY016NV—Wet meadow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

221—Hardtil-Alpineco-Rock outcrop complex, 30 to 75 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 7,000 to 8,000

Precipitation: 30 to 45 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Hardtil gravelly loamy coarse sand, 30 to 75 percent slopes—45 percent

Alpineco very stony coarse sandy loam, 30 to 75 percent slopes—25 percent

Rock outcrop—20 percent

Burnlake extremely gravelly sandy loam, 15 to 50 percent slopes—7 percent

Aquic Haplocryolls very bouldery sandy loam, 8 to 30 percent slopes—2 percent

Hopeval mucky loam, wet, 0 to 8 percent slopes—1 percent

Component Description

Hardtil and similar soils

Landform: Mountains

Slope: 30 to 75 percent

Parent material: Till derived from mixed rock sources and colluvium from granodiorite

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—mountain big sagebrush

Site index: Lodgepole pine—53

Typical profile:

Surface rock fragments: About 20 percent fine gravel, 15 percent gravel, 5 percent cobbles, 5 percent stones, 5 percent boulders

Layer 1—0 to 3 inches; gravelly loamy coarse sand

Layer 2—3 to 7 inches; very gravelly coarse sandy loam

Layer 3—7 to 18 inches; very gravelly coarse sandy loam

Layer 4—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone): High,
(Permeability class: Rapid)

Available water capacity: About 1.1 inches

Present flooding: None

Present ponding: None

Water table: Present

Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 7e

Ecological site: F022AY102NV

Component Description

Alpineco and similar soils

Landform: Mountains

Slope: 30 to 75 percent

Parent material: Till derived from mixed rock sources
and colluvium from granodiorite

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—mountain big sagebrush

Site index: Lodgepole pine—53

Typical profile:

Surface rock fragments: About 15 percent gravel, 5
percent stones, 5 percent boulders

Layer 1—0 to 3 inches; very stony coarse sandy loam

Layer 2—3 to 12 inches; very stony coarse sandy loam

Layer 3—12 to 22 inches; very stony coarse sandy loam

Layer 4—22 to 27 inches; very stony coarse sandy loam

Layer 5—27 to 49 inches; extremely stony coarse sandy
loam

Layer 6—49 to 59 inches; bedrock

See "Chemical Properties of Soils" table and the
"Physical Properties of Soils" table for more
information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (lithic): 40 to 60
inches

Saturated hydraulic conductivity class (root zone): High,
(Permeability class: Moderately rapid)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Water table: Present

Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY102NV

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in
characteristics are in the "Classification of the Soils"
section.

Contrasting Inclusions

Burnlake and similar soils

Composition: 0 to 7 percent

Slope: 15 to 50 percent

Landform: Moraines

Typical vegetation: Forest canopy—Jeffrey pine Forest
understory—other perennial forbs, mountain big
sagebrush, snowberry, currant

Ecological site: F022AY116NV

Aquic Haplocryolls and similar soils

Composition: 0 to 2 percent

Classification: Loamy-skeletal, isotic Aquic Haplocryolls

Slope: 8 to 30 percent

Landform: Foothills of mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada

bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Hopeval and similar soils

Composition: 0 to 1 percent

Slope: 0 to 8 percent

Landform: Swales

Typical vegetation: Nebraska sedge, tufted hairgrass,
Baltic rush, other perennial forbs, other perennial
grasses

Ecological site: R022AY016NV—Wet meadow

Management

For information about managing this map unit, see the
following sections and associated tables in this
publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

222—Hardtil-Alpineco-Rock outcrop complex, warm, 8 to 30 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains
 Elevation: 7,000 to 8,000
 Precipitation: 30 to 45 inches
 Air temperature: 39 to 45 degrees Fahrenheit
 Frost-free period: 40 to 70 days

Composition

Hardtil gravelly loamy coarse sand, warm, 8 to 30 percent slopes—40 percent
 Alpineco very stony coarse sandy loam, warm, 8 to 30 percent slopes—25 percent
 Rock outcrop—20 percent
 Clodburst extremely bouldery coarse sandy loam, 8 to 30 percent slopes—5 percent
 Aspetill very gravelly sandy loam, 8 to 30 percent slopes—3 percent
 Murain extremely stony coarse sandy loam, 8 to 30 percent slopes—2 percent
 Wolfcut very stony loam, 8 to 30 percent slopes—2 percent
 Cumulic Cryaquolls very fine sandy loam, 2 to 15 percent slopes—1 percent
 Typic Cryaquents extremely gravelly coarse sand, 2 to 8 percent slopes—1 percent
 Aquic Haplocryolls very bouldery sandy loam, 8 to 30 percent slopes—1 percent

Component Description

Hardtil and similar soils

Landform: Mountains
 Slope: 8 to 30 percent
 Parent material: Till derived from mixed rock sources and colluvium from granodiorite
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—mountain big sagebrush, currant, snowberry
 Site index: Jeffrey pine—20

Typical profile:

Surface rock fragments: About 20 percent fine gravel, 15 percent gravel, 5 percent cobbles, 5 percent stones, 5 percent boulders
 Layer 1—0 to 3 inches; gravelly loamy coarse sand
 Layer 2—3 to 7 inches; very gravelly coarse sandy loam
 Layer 3—7 to 18 inches; very gravelly coarse sandy loam
 Layer 4—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 1.1 inches
 Present flooding: None
 Present ponding: None
 Water table: Present
 Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 7e
 Ecological site: F022AY130NV

Component Description

Alpineco and similar soils

Landform: Mountains
 Slope: 8 to 30 percent
 Parent material: Till derived from mixed rock sources and colluvium from granodiorite
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—mountain big sagebrush, currant, snowberry
 Site index: Jeffrey pine—35

Typical profile:

Surface rock fragments: About 5 percent boulders, 5 percent stones, 15 percent gravel
 Layer 1—0 to 3 inches; very stony coarse sandy loam
 Layer 2—3 to 12 inches; very stony coarse sandy loam
 Layer 3—12 to 22 inches; very stony coarse sandy loam
 Layer 4—22 to 27 inches; very stony coarse sandy loam
 Layer 5—27 to 49 inches; extremely stony coarse sandy loam
 Layer 6—49 to 59 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low
 Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 5 inches
 Present flooding: None
 Present ponding: None
 Water table: Present
 Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY130NV

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Cloudburst and similar soils

Composition: 0 to 5 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Aspetill and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—quaking aspen Forest understory—snowberry, other perennial forbs, slender wheatgrass, mountain brome

Ecological site: F022AY103NV

Murain and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Wolfcut and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Fan remnants

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, currant, snowberry, mountain big sagebrush

Ecological site: F022AY116NV

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, isotic Aquic Haplocryolls

Slope: 8 to 30 percent

Landform: Foothills of moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—Woods' rose, slender

wheatgrass, Nevada bluegrass, other perennial forbs, willow

Ecological site: F022AY104NV

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive

Cumulic Cryaquolls

Slope: 2 to 15 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, bluegrass, other perennial forbs, other perennial grasses, Baltic rush, sedge, tufted hairgrass

Ecological site: R022AY017NV—Semi-wet meadow

Typic Cryaquents and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed Typic Cryaquents

Slope: 2 to 8 percent

Landform: Bars

Typical vegetation: Kentucky bluegrass, willow, Woods' rose, creeping wildrye

Ecological site: R022AY015NV—Streambank

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

230—Hawkinspeak-Thiefbridge-Angelwhine association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 10,000

Precipitation: 30 to 45 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Hawkinspeak very gravelly sandy loam, warm, 15 to 50 percent slopes—45 percent

Thiefbridge very stony slightly decomposed plant material, 8 to 30 percent slopes—25 percent

Angelwhine extremely gravelly coarse sandy loam, moist, 15 to 50 percent slopes—15 percent
 Florand very gravelly peaty sandy loam, 15 to 50 percent slopes—3 percent
 Hawkridge extremely gravelly coarse sandy loam, 8 to 30 percent slopes—3 percent
 Thiefridge very stony fine sandy loam, moist, 8 to 30 percent slopes—2 percent
 Ultic Haploxeralfs very stony sandy loam, 15 to 50 percent slopes—2 percent
 Aspocket gravelly sandy loam, 15 to 50 percent slopes—2 percent
 Rock outcrop—1 percent
 Aquic Haplocryolls very bouldery sandy loam, 4 to 30 percent slopes—1 percent
 Hawkinspeak very gravelly sandy loam, 15 to 50 percent slopes—1 percent

Component Description

Hawkinspeak and similar soils

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders
 Layer 1—0 to 3 inches; very gravelly sandy loam
 Layer 2—3 to 9 inches; very gravelly sandy loam
 Layer 3—9 to 33 inches; very gravelly sandy clay loam
 Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R022AY021NV—South slope 30+ P.Z.

Component Description

Thiefridge and similar soils

Landform: Shoulders of mountains
 Slope: 8 to 30 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Typical profile:

Surface rock fragments: About 20 percent gravel, 15 percent cobbles, 20 percent stones
 Layer 1—0 to 1 inch; very stony slightly decomposed plant material
 Layer 2—1 to 4 inches; very cobbly fine sandy loam
 Layer 3—4 to 8 inches; extremely cobbly sandy loam
 Layer 4—8 to 12 inches; extremely cobbly sandy loam
 Layer 5—12 to 17 inches; very cobbly sandy loam
 Layer 6—17 to 27 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R022AY024NV—Mahogany Savanna

Component Description

Angelwhine and similar soils

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders
 Layer 1—0 to 15 inches; extremely gravelly coarse sandy loam
 Layer 2—15 to 23 inches; very gravelly coarse sandy loam
 Layer 3—23 to 43 inches; very gravelly sandy clay loam
 Layer 4—43 to 60 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 6 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Florand and similar soils

Composition: 0 to 3 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry
 Ecological site: F022AY118NV

Hawkridge and similar soils

Composition: 0 to 3 percent
 Slope: 8 to 30 percent
 Landform: Shoulders of mountains

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass
 Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Aspocket and similar soils

Composition: 0 to 2 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Thief ridge and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Shoulders of mountains
 Typical vegetation: Needlegrass, bluegrass, other perennial forbs, curleaf mountainmahogany, snowberry
 Ecological site: R022AY025NV—Mahogany thicket

Ultic Haploxeralfs and similar soils

Composition: 0 to 2 percent
 Classification: Loamy-skeletal, isotic Ultic Haploxeralfs
 Slope: 15 to 50 percent, south aspect
 Landform: South facing backslopes of mountains
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
 Ecological site: F022AY116NV

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent
 Classification: Loamy-skeletal, isotic Aquic Haplocryolls
 Slope: 4 to 30 percent
 Landform: Toeslopes of mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—slender wheatgrass, Nevada bluegrass, other perennial forbs, Woods' rose, willow
 Ecological site: F022AY104NV

Hawkinspeak and similar soils

Composition: 0 to 1 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome
 Ecological site: R022AY010NV—Mountain shoulders 30+ P.Z.

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

231—Hawkinspeak association**Map Unit Setting**

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 10,000

Precipitation: 30 to 45 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Hawkinspeak very gravelly sandy loam, moist, 15 to 50 percent slopes—50 percent

Hawkinspeak very gravelly sandy loam, 15 to 50 percent slopes—35 percent

Pachic Argicryolls very stony sandy loam, moist, 15 to 50 percent slopes—5 percent

Lostridge very gravelly coarse sandy loam, 8 to 30 percent slopes—3 percent

Lithnip extremely gravelly sandy loam, 15 to 50 percent slopes—2 percent

Hawkridge extremely gravelly coarse sandy loam, 8 to 30 percent slopes—2 percent

Aspocket gravelly sandy loam, 15 to 50 percent slopes—2 percent

Rock outcrop—1 percent

Component Description**Hawkinspeak and similar soils**

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders

Layer 1—0 to 3 inches; very gravelly sandy loam

Layer 2—3 to 9 inches; very gravelly sandy loam

Layer 3—9 to 33 inches; very gravelly sandy clay loam

Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Component Description**Hawkinspeak and similar soils**

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders

Layer 1—0 to 3 inches; very gravelly sandy loam

Layer 2—3 to 9 inches; very gravelly sandy loam

Layer 3—9 to 33 inches; very gravelly sandy clay loam

Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderate)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY010NV—Mountain shoulders 30+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Pachic Argicryolls and similar soils**

Composition: 0 to 5 percent

Classification: Loamy-skeletal, isotic Pachic Argicryolls

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain brome, muttongrass, other perennial grasses, other perennial forbs, mountain big sagebrush, bitter cherry, common chokecherry, snowberry

Ecological site: R022AY020NV—Prunus pocket

Lostridge and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—mountain big sagebrush, currant, snowberry

Ecological site: F022AY105NV

Aspocket and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

HawkrIDGE and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

LithnIP and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Indian ricegrass, western needlegrass, bluegrass, eriogonum, lupine, wild mint, goldenweed, mulesears wyethia

Ecological site: R022AY012NV—Barren slope 20+ P.Z.

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

232—Hawkinspeak-HawkrIDGE association***Map Unit Setting***

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 10,000

Precipitation: 30 to 45 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Hawkinspeak very gravelly sandy loam, moist, 8 to 30 percent slopes—45 percent

Hawkinspeak very gravelly sandy loam, 8 to 30 percent slopes—25 percent

HawkrIDGE very stony sandy loam, 4 to 30 percent slopes—15 percent

LithnIP extremely gravelly sandy loam, 15 to 50 percent slopes—4 percent

Aspocket gravelly sandy loam, 4 to 30 percent slopes—2 percent

Aspocket gravelly sandy loam, moist, 4 to 30 percent slopes—2 percent

Lostridge very gravelly coarse sandy loam, 8 to 30 percent slopes—2 percent

Rock outcrop—2 percent

Thief ridge very stony fine sandy loam, 8 to 30 percent slopes—2 percent

Cumulic Cryaquolls mucky loam, 4 to 30 percent slopes—1 percent

Component Description

Hawkinspeak and similar soils

Landform: Backslopes of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders

Layer 1—0 to 3 inches; very gravelly sandy loam

Layer 2—3 to 9 inches; very gravelly sandy loam

Layer 3—9 to 33 inches; very gravelly sandy clay loam

Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Component Description

Hawkinspeak and similar soils

Landform: Backslopes of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders

Layer 1—0 to 3 inches; very gravelly sandy loam

Layer 2—3 to 9 inches; very gravelly sandy loam

Layer 3—9 to 33 inches; very gravelly sandy clay loam

Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY010NV—Mountain shoulders 30+ P.Z.

Component Description

Hawkr ridge and similar soils

Landform: Shoulders of mountains

Slope: 4 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Typical profile:

Surface rock fragments: About 30 percent gravel, 10 percent cobbles, 10 percent stones

Layer 1—0 to 1 inch; very stony sandy loam

Layer 2—1 to 7 inches; very gravelly sandy loam

Layer 3—7 to 14 inches; very gravelly sandy clay loam

Layer 4—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 7 to 14 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 1.3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Lithnip and similar soils

Composition: 0 to 4 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Indian ricegrass, western needlegrass, bluegrass, eriogonum, lupine, wild mint, goldenweed, mulesears wyethia
 Ecological site: R022AY012NV—Barren slope 20+ P.Z.

Aspocket and similar soils

Composition: 0 to 2 percent
 Slope: 4 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Aspocket and similar soils

Composition: 0 to 2 percent
 Slope: 4 to 30 percent
 Landform: Mountains
 Typical vegetation: Needlegrass, mountain brome, other perennial forbs, quaking aspen, snowberry
 Ecological site: R022AY046NV—Aspen thicket

Lostridge and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—mountain big sagebrush, currant, snowberry
 Ecological site: F022AY105NV

Rock outcrop

Composition: 0 to 2 percent
 Landform: Mountains
 Ecological site: None

Thiefridge and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Shoulders of mountains
 Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany
 Ecological site: R022AY024NV—Mahogany Savanna

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent
 Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls
 Slope: 4 to 30 percent
 Landform: Dissected plains
 Typical vegetation: Nebraska sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses
 Ecological site: R022AY016NV—Wet meadow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

233—Hawkinspeak-Angelwhine-HawkrIDGE association

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 8,000 to 10,000
 Precipitation: 30 to 45 inches
 Air temperature: 36 to 39 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Hawkinspeak very gravelly sandy loam, warm, 15 to 50 percent slopes—30 percent
 Angelwhine extremely gravelly coarse sandy loam, 15 to 50 percent slopes—30 percent
 Hawkridge very stony sandy loam, 4 to 30 percent slopes—25 percent
 Lithnip extremely gravelly sandy loam, 30 to 75 percent slopes—5 percent
 Thiefridge very stony fine sandy loam, 8 to 30 percent slopes—3 percent
 Sumeadow very gravelly peaty sandy loam, 15 to 50 percent slopes—2 percent
 Rock outcrop—1 percent
 Typic Cryaquolls very gravelly sandy loam, 4 to 15 percent slopes—1 percent
 Cumulic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—1 percent
 Dunderberg very gravelly ashy sandy loam, warm, 15 to 50 percent slopes—1 percent
 Waterpeak very bouldery coarse sand, 15 to 50 percent slopes—1 percent

Component Description**Angelwhine and similar soils**

Landform: Mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium from andesitic tuff
 Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 1 percent subrounded boulders, 2 percent subrounded stones, 5 percent subrounded cobbles
 Layer 1—0 to 15 inches; extremely gravelly coarse sandy loam
 Layer 2—15 to 23 inches; very gravelly coarse sandy loam
 Layer 3—23 to 43 inches; very gravelly sandy clay loam
 Layer 4—43 to 60 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R022AY021NV—South slope 30+ P.Z.

Component Description**Hawkinspeak and similar soils**

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders
 Layer 1—0 to 3 inches; very gravelly sandy loam
 Layer 2—3 to 9 inches; very gravelly sandy loam
 Layer 3—9 to 33 inches; very gravelly sandy clay loam
 Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R022AY021NV—South slope 30+ P.Z.

Component Description**Hawkridge and similar soils**

Landform: Shoulders of mountains
 Slope: 4 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Typical profile:

Surface rock fragments: About 30 percent gravel, 10 percent cobbles, 10 percent stones

Layer 1—0 to 1 inch; very stony sandy loam

Layer 2—1 to 7 inches; very gravelly sandy loam

Layer 3—7 to 14 inches; very gravelly sandy clay loam

Layer 4—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 7 to 14 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Lithnip and similar soils

Composition: 0 to 5 percent

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Indian ricegrass, western needlegrass, bluegrass, eriogonum, lupine, wild mint, goldenweed, mulesears wyethia

Ecological site: R022AY012NV—Barren slope 20+ P.Z.

Thiefridge and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Sumeadow and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry

Ecological site: F022AY127NV

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls

Slope: 2 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Dunderberg and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Moraines

Typical vegetation: Western needlegrass, mountain

brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY021NV—South slope 30+ P.Z.

Rock outcrop

Composition: 0 to 1 percent

Landform: Peaks

Ecological site: None

Typic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 4 to 15 percent

Landform: Flood plains

Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

Waterpeak and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush
 Ecological site: R022AY021NV—South slope 30+ P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

234—Hawkinspeak-Thiefridge association

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 8,000 to 10,000
 Precipitation: 30 to 45 inches
 Air temperature: 36 to 39 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Hawkinspeak very gravelly sandy loam, 15 to 50 percent slopes—40 percent
 Hawkinspeak very gravelly sandy loam, moist, 30 to 50 percent slopes—25 percent
 Thiefridge very stony fine sandy loam, 4 to 30 percent slopes—20 percent
 Hawkridge extremely gravelly coarse sandy loam, 4 to 30 percent slopes—6 percent
 Sweetmount very gravelly sandy loam, 4 to 30 percent slopes—3 percent
 Aspocket gravelly sandy loam, moist, 4 to 30 percent slopes—2 percent
 Sumeadow very gravelly peaty sandy loam, 15 to 50 percent slopes—2 percent
 Rock outcrop—1 percent
 Typic Argicryolls very gravelly coarse sandy loam, 8 to 30 percent slopes—1 percent

Component Description

Hawkinspeak and similar soils

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Mountain big sagebrush, mountain brome, western needlegrass

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders
 Layer 1—0 to 3 inches; very gravelly sandy loam
 Layer 2—3 to 9 inches; very gravelly sandy loam
 Layer 3—9 to 33 inches; very gravelly sandy clay loam
 Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R022AY010NV—Mountain shoulders 30+ P.Z.

Component Description

Hawkinspeak and similar soils

Landform: Backslopes of mountains
 Slope: 30 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders
 Layer 1—0 to 3 inches; very gravelly sandy loam
 Layer 2—3 to 9 inches; very gravelly sandy loam
 Layer 3—9 to 33 inches; very gravelly sandy clay loam
 Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderate)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Component Description**Thief ridge and similar soils**

Landform: Shoulders of mountains

Slope: 4 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Typical profile:

Surface rock fragments: About 20 percent gravel, 15 percent cobbles, 20 percent stones

Layer 1—0 to 1 inch; very stony slightly decomposed plant material

Layer 2—1 to 4 inches; very cobbly fine sandy loam

Layer 3—4 to 8 inches; extremely cobbly sandy loam

Layer 4—8 to 12 inches; extremely cobbly sandy loam

Layer 5—12 to 17 inches; very cobbly sandy loam

Layer 6—17 to 27 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY024NV—Mahogany Savanna

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Hawkridge and similar soils**

Composition: 0 to 6 percent

Slope: 4 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Sweetmount and similar soils

Composition: 0 to 3 percent

Slope: 4 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, snowberry

Ecological site: R022AY052NV—Gravelly slope 16+ P.Z.

Aspocket and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Needlegrass, mountain brome, other perennial forbs, quaking aspen, snowberry

Ecological site: R022AY046NV—Aspen thicket

Sumeadow and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry

Ecological site: F022AY127NV

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Typic Argicryolls and similar soils

Composition: 0 to 1 percent

Slope: 8 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Other shrubs, needlegrass, bluegrass, other perennial forbs
Ecological site: R022AY032NV—Alpine ridge

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
"Range" section
"Engineering" and "Soil Properties" sections

235—Hawkinspeak-Angelwhine association

Map Unit Setting

MLRA: 22A
Landscape: Mountains
Elevation: 8,000 to 10,000
Precipitation: 25 to 35 inches
Air temperature: 36 to 39 degrees Fahrenheit
Frost-free period: 30 to 60 days

Composition

Hawkinspeak very gravelly sandy loam, 30 to 75 percent slopes—35 percent
Hawkinspeak very gravelly sandy loam, warm, 30 to 75 percent slopes—30 percent
Angelwhine extremely gravelly coarse sandy loam, moist, 30 to 75 percent slopes—20 percent
Hawkridge extremely gravelly coarse sandy loam, 8 to 30 percent slopes—4 percent
Thief ridge very stony fine sandy loam, moist, 15 to 50 percent slopes—3 percent
Rock outcrop—2 percent
Loope very gravelly sandy loam, 30 to 75 percent slopes—2 percent
Aspocket gravelly sandy loam, moist, 30 to 75 percent slopes—2 percent
Pachic Argicryolls very stony sandy loam, moist, 30 to 75 percent slopes—1 percent
Fishsnoot very gravelly sandy loam, cool, 15 to 50 percent slopes—1 percent

Component Description

Hawkinspeak and similar soils

Landform: Backslopes of mountains
Slope: 30 to 75 percent
Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders
Layer 1—0 to 3 inches; very gravelly sandy loam
Layer 2—3 to 9 inches; very gravelly sandy loam
Layer 3—9 to 33 inches; very gravelly sandy clay loam
Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
Available water capacity: About 3 inches
Present flooding: None
Present ponding: None
Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
Ecological site: R022AY010NV—Mountain shoulders 30+ P.Z.

Component Description

Hawkinspeak and similar soils

Landform: Backslopes of mountains
Slope: 30 to 75 percent
Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders
Layer 1—0 to 3 inches; very gravelly sandy loam
Layer 2—3 to 9 inches; very gravelly sandy loam
Layer 3—9 to 33 inches; very gravelly sandy clay loam
Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderate)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY021NV—South slope 30+ P.Z.

Component Description**Angelwhine and similar soils**

Landform: Backslopes of mountains

Slope: 30 to 75 percent

Parent material: Colluvium from andesitic tuff

Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 5 percent subrounded cobbles, 2 percent subrounded stones, 1 percent subrounded boulders

Layer 1—0 to 15 inches; extremely gravelly coarse sandy loam

Layer 2—15 to 23 inches; very gravelly coarse sandy loam

Layer 3—23 to 43 inches; very gravelly sandy clay loam

Layer 4—43 to 60 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Hawkridge and similar soils**

Composition: 0 to 4 percent

Slope: 8 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Thief ridge and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Shoulders of mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, curleaf mountainmahogany, snowberry

Ecological site: R022AY025NV—Mahogany thicket

Aspocket and similar soils

Composition: 0 to 2 percent

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Needlegrass, mountain brome, other perennial forbs, quaking aspen, snowberry

Ecological site: R022AY046NV—Aspen thicket

Loope and similar soils

Composition: 0 to 2 percent

Slope: 30 to 75 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Rock outcrop

Composition: 0 to 2 percent

Landform: Mountains

Ecological site: None

Fishsnooze and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent, northeast aspect

Landform: Northeast facing mountains

Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs

Ecological site: F022AY126NV

Pachic Argicryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, isotic Pachic Argicryolls

Slope: 30 to 75 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain brome, muttongrass, other perennial grasses, other perennial forbs, mountain big sagebrush, bitter cherry, common chokecherry, snowberry

Ecological site: R022AY020NV—Prunus pocket

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

240—Granylith-Hargran-Rock outcrop complex, 8 to 30 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 9,000

Precipitation: 35 to 55 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Granylith very gravelly loamy coarse sand, 8 to 30 percent slopes—45 percent

Hargran stony coarse sandy loam, 8 to 30 percent slopes—25 percent

Rock outcrop—15 percent

Aquic Haplocryolls very bouldery sandy loam, 4 to 15 percent slopes—5 percent

Stumpatil very gravelly coarse sandy loam, 8 to 30 percent slopes—4 percent

Hopeval mucky loam, wet, 4 to 15 percent slopes—3 percent

Typic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—3 percent

Component Description

Granylith and similar soils

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Till derived from mixed rock sources and colluvium from granodiorite

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—greenleaf manzanita, needlegrass

Site index: Lodgepole pine—83

Typical profile:

Surface rock fragments: About 2 percent stones, 10 percent gravel, 15 percent fine gravel, 3 percent boulders

Layer 1—0 to 1 inch; very gravelly loamy coarse sand

Layer 2—1 to 4 inches; very gravelly loamy coarse sand

Layer 3—4 to 12 inches; very gravelly loamy coarse sand

Layer 4—12 to 15 inches; very gravelly coarse sandy loam

Layer 5—15 to 25 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.6 inch

Present flooding: None

Present ponding: None

Water table: Present

Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: F022AY107NV

Component Description

Hargran and similar soils

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Till derived from mixed rock sources and colluvium from granodiorite

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—snowberry, mountain big sagebrush, western needlegrass, wild mint, currant, mountain brome, lupine

Site index: California red fir—24

Site index: Lodgepole pine—83

Typical profile:

Surface rock fragments: About 10 percent boulders, 1 percent stones, 10 percent cobbles, 10 percent gravel

Layer 1—0 to 1 inch; stony moderately decomposed plant material

Layer 2—1 to 9 inches; stony coarse sandy loam

Layer 3—9 to 24 inches; stony sandy loam

Layer 4—24 to 36 inches; very stony sandy loam

Layer 5—36 to 39 inches; very stony sandy loam

Layer 6—39 to 49 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Water table: Present

Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 6e

Ecological site: F022AY118NV

Component Description**Rock outcrop**

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Aquic Haplocryolls and similar soils**

Composition: 0 to 5 percent

Classification: Loamy-skeletal, isotic Aquic Haplocryolls

Slope: 4 to 15 percent

Landform: Footslopes of moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada

bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Stumpatil and similar soils

Composition: 0 to 4 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—California red fir,

lodgepole pine Forest understory—western

needlegrass, mountain big sagebrush, mountain

brome, lupine, currant, wild mint, snowberry

Ecological site: F022AY118NV

Hopeval and similar soils

Composition: 0 to 3 percent

Slope: 4 to 15 percent

Landform: Flood plains

Typical vegetation: Nebraska sedge, tufted hairgrass,

Baltic rush, other perennial forbs, other perennial

grasses

Ecological site: R022AY016NV—Wet meadow

Typic Cryaquolls and similar soils

Composition: 0 to 3 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 2 to 8 percent

Landform: Flood plains

Typical vegetation: Sedge, tufted hairgrass, Kentucky

bluegrass, other perennial forbs, willow

Ecological site: R022AY033NV—Wet willow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

250—Florand-Lostridge-Fishsnooze association***Map Unit Setting***

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 9,000

Precipitation: 35 to 55 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Florand very gravelly peaty sandy loam, 15 to 50 percent slopes—40 percent

Lostridge very gravelly coarse sandy loam, 15 to 50 percent slopes—30 percent

Fishsnooze very gravelly peaty coarse sandy loam, 15 to 50 percent slopes—15 percent

Stumpatil very gravelly coarse sandy loam, 8 to 30 percent slopes—3 percent

Lithnip extremely gravelly sandy loam, moist, 8 to 30 percent slopes—3 percent

Aquic Haplocryolls very bouldery sandy loam, 4 to 15 percent slopes—3 percent

Morscour extremely gravelly sandy loam, 8 to 30 percent slopes—2 percent

Typic Cryaquolls very gravelly sandy loam, 4 to 30 percent slopes—2 percent

Lithnip extremely gravelly sandy loam, 30 to 75 percent slopes—2 percent

Component Description

Florand and similar soils

Landform: Mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry

Site index: California red fir—29

Site index: Lodgepole pine—52

Typical profile:

Surface rock fragments: About 1 percent stones, 35 percent gravel

Layer 1—0 to 1 inch; very gravelly peaty sandy loam

Layer 2—1 to 4 inches; very gravelly sandy loam

Layer 3—4 to 12 inches; gravelly sandy loam

Layer 4—12 to 18 inches; gravelly sandy loam

Layer 5—18 to 28 inches; very gravelly sandy loam

Layer 6—28 to 38 inches; very gravelly sandy loam

Layer 7—38 to 47 inches; gravelly sandy loam

Layer 8—47 to 57 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY118NV

Component Description

Lostridge and similar soils

Landform: Mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—mountain big sagebrush, currant, snowberry

Site index: California red fir—29

Site index: Lodgepole pine—52

Typical profile:

Surface rock fragments: About 35 percent gravel

Layer 1—0 to 3 inches; very gravelly coarse sandy loam

Layer 2—3 to 11 inches; very gravelly coarse sandy loam

Layer 3—11 to 23 inches; very gravelly coarse sandy loam

Layer 4—23 to 29 inches; very gravelly coarse sandy loam

Layer 5—29 to 39 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY105NV

Component Description

Fishsnooze and similar soils

Landform: Northeast facing mountains

Slope: 15 to 50 percent, northeast aspect
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Forest canopy—mountain hemlock
 Forest understory—Currant, Ross' sedge
 Site index: Mountain hemlock—62

Typical profile:

Surface rock fragments: About 5 percent cobbles, 35 percent gravel
 Layer 1—0 to 1 inch; very gravelly peaty coarse sandy loam
 Layer 2—1 to 9 inches; very gravelly coarse sandy loam
 Layer 3—9 to 13 inches; extremely gravelly coarse sandy loam
 Layer 4—13 to 35 inches; extremely cobbly coarse sandy loam
 Layer 5—35 to 45 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F022AY114NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Aquic Haplocryolls and similar soils

Composition: 0 to 3 percent
 Classification: Loamy-skeletal, isotic Aquic Haplocryolls
 Slope: 4 to 15 percent
 Landform: Footslopes of moraines
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—slender wheatgrass, Nevada bluegrass, other perennial forbs, Woods' rose, willow
 Ecological site: F022AY104NV

Lithnip moist and similar soils

Composition: 0 to 3 percent
 Slope: 8 to 30 percent
 Landform: Summits of mountains
 Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs
 Ecological site: R022AY032NV—Alpine ridge

Stumpatil and similar soils

Composition: 0 to 3 percent
 Slope: 8 to 30 percent
 Landform: Moraines
 Typical vegetation: Forest canopy—California red fir, lodgepole pine
 Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry
 Ecological site: F022AY118NV

Lithnip and similar soils

Composition: 0 to 2 percent
 Slope: 30 to 75 percent
 Landform: Shoulders of mountains
 Typical vegetation: Indian ricegrass, western needlegrass, bluegrass, eriogonum, lupine, wild mint, goldenweed, mulesears wyethia
 Ecological site: R022AY012NV—Barren slope 20+ P.Z.

Morscour and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Mountains
 Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush, snowberry
 Ecological site: R022AY038NV—Shallow loam 30+ P.Z.

Typic Cryaquolls and similar soils

Composition: 0 to 2 percent
 Classification: Sandy-skeletal, mixed Typic Cryaquolls
 Slope: 4 to 30 percent
 Landform: Flood plains
 Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow
 Ecological site: R022AY034NV—Moist willow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Forest land" section

"Engineering" and "Soil Properties" sections

260—HawkrIDGE-Hawkinspeak association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 10,000

Precipitation: 35 to 50 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

HawkrIDGE extremely gravelly coarse sandy loam, 8 to 30 percent slopes—35 percent

Hawkinspeak very gravelly sandy loam, 15 to 50 percent slopes—30 percent

Hawkinspeak very gravelly sandy loam, moist, 15 to 50 percent slopes—20 percent

LostrIDGE very gravelly coarse sandy loam, 15 to 50 percent slopes—4 percent

ThiefRIDGE very stony fine sandy loam, 8 to 30 percent slopes—3 percent

Rock outcrop—3 percent

Typic Cryaquolls very gravelly sandy loam, 4 to 30 percent slopes—2 percent

Lithnip extremely gravelly sandy loam, moist, 30 to 75 percent slopes—2 percent

Aspocket gravelly sandy loam, 4 to 15 percent slopes—1 percent

Component Description

HawkrIDGE and similar soils

Landform: Shoulders of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Typical profile:

Surface rock fragments: About 3 percent stones, 5 percent cobbles, 50 percent gravel

Layer 1—0 to 1 inch; extremely gravelly coarse sandy loam

Layer 2—1 to 7 inches; very gravelly sandy loam

Layer 3—7 to 14 inches; very gravelly sandy clay loam

Layer 4—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 7 to 14 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Component Description

Hawkinspeak and similar soils

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders

Layer 1—0 to 3 inches; very gravelly sandy loam

Layer 2—3 to 9 inches; very gravelly sandy loam

Layer 3—9 to 33 inches; very gravelly sandy clay loam

Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None
Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
Ecological site: R022AY010NV—Mountain shoulders
30+ P.Z.

Component Description

Hawkinspeak and similar soils

Landform: Backslopes of mountains
Slope: 15 to 50 percent
Parent material: Colluvium derived from andesite or tuff
breccia over residuum derived from andesite or tuff
breccia
Typical vegetation: Western needlegrass, mountain
brome, melic, other perennial forbs, mountain big
sagebrush

Typical profile:

Surface rock fragments: About 45 percent gravel, 5
percent cobbles, 3 percent stones, 1 percent
boulders
Layer 1—0 to 3 inches; very gravelly sandy loam
Layer 2—3 to 9 inches; very gravelly sandy loam
Layer 3—9 to 33 inches; very gravelly sandy clay loam
Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the
"Physical Properties of Soils" table for more
information.

Component Properties and Qualities

Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40
inches
Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderate)
Available water capacity: About 3 inches
Present flooding: None
Present ponding: None
Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Typical soil descriptions including ranges in
characteristics are in the "Classification of the Soils"
section.

Contrasting Inclusions

Lostridge and similar soils

Composition: 0 to 4 percent

Slope: 15 to 50 percent
Landform: Mountains
Typical vegetation: Forest canopy—California red fir,
lodgepole pine Forest understory—mountain big
sagebrush, currant, snowberry
Ecological site: F022AY105NV

Rock outcrop

Composition: 0 to 3 percent
Landform: Mountains
Ecological site: None

Thiefridge and similar soils

Composition: 0 to 3 percent
Slope: 8 to 30 percent
Landform: Shoulders of mountains
Typical vegetation: Bluegrass, needlegrass, other
perennial forbs, mountain big sagebrush, curlleaf
mountainmahogany
Ecological site: R022AY024NV—Mahogany Savanna

Lithnip and similar soils

Composition: 0 to 2 percent
Slope: 30 to 75 percent
Landform: Shoulders of mountains
Typical vegetation: Needlegrass, bluegrass, other
perennial forbs, other shrubs
Ecological site: R022AY032NV—Alpine ridge

Typic Cryaquolls and similar soils

Composition: 0 to 2 percent
Classification: Sandy-skeletal, mixed Typic Cryaquolls
Slope: 4 to 30 percent
Landform: Flood plains
Typical vegetation: Sedge, slender wheatgrass,
bluegrass, other perennial forbs, willow
Ecological site: R022AY034NV—Moist willow

Aspocket and similar soils

Composition: 0 to 1 percent
Slope: 4 to 15 percent
Landform: Mountains
Typical vegetation: Forest canopy—quaking aspen
Forest understory—mountain brome, slender
wheatgrass, other perennial forbs, snowberry
Ecological site: F022AY103NV

Management

For information about managing this map unit, see the
following sections and associated tables in this
publication:
"Range" section
"Forest land" section

"Engineering" and "Soil Properties" sections

261—HawkrIDGE-LithnIP-Hawkinspeak association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 10,000

Precipitation: 35 to 50 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

HawkrIDGE very stony sandy loam, 8 to 30 percent slopes—30 percent

LithnIP extremely gravelly sandy loam, 30 to 75 percent slopes—25 percent

Hawkinspeak very gravelly sandy loam, 15 to 50 percent slopes—20 percent

LostrIDGE very gravelly coarse sandy loam, 15 to 50 percent slopes—10 percent

Hawkinspeak very gravelly sandy loam, moist, 15 to 50 percent slopes—4 percent

Florand very gravelly peaty sandy loam, 8 to 30 percent slopes—3 percent

LithnIP extremely gravelly sandy loam, moist, 8 to 30 percent slopes—3 percent

Typic Cryaquolls very gravelly sandy loam, 4 to 30 percent slopes—2 percent

Rock outcrop—2 percent

Aspocket gravelly sandy loam, 4 to 15 percent slopes—1 percent

Component Description

HawkrIDGE and similar soils

Landform: Shoulders of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Typical profile:

Surface rock fragments: About 30 percent gravel, 10 percent cobbles, 10 percent stones

Layer 1—0 to 1 inch; very stony sandy loam

Layer 2—1 to 7 inches; very gravelly sandy loam

Layer 3—7 to 14 inches; very gravelly sandy clay loam

Layer 4—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 7 to 14 inches

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Component Description

LithnIP and similar soils

Landform: Mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Indian ricegrass, western needlegrass, bluegrass, eriogonum, lupine, wild mint, goldenweed, mulesears wyethia

Typical profile:

Surface rock fragments: About 1 percent stones, 60 percent gravel

Layer 1—0 to 1 inch; extremely gravelly sandy loam

Layer 2—1 to 5 inches; very gravelly sandy loam

Layer 3—5 to 15 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 4 to 10 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 0.3 inch

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: R022AY012NV—Barren slope 20+ P.Z.

Component Description**Hawkinspeak and similar soils**

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders

Layer 1—0 to 3 inches; very gravelly sandy loam

Layer 2—3 to 9 inches; very gravelly sandy loam

Layer 3—9 to 33 inches; very gravelly sandy clay loam

Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY010NV—Mountain shoulders 30+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Lostridge and similar soils**

Composition: 0 to 10 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—mountain big sagebrush, currant, snowberry

Ecological site: F022AY105NV

Hawkinspeak and similar soils

Composition: 0 to 4 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush

Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Florand and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Toeslopes of mountains

Typical vegetation: Forest canopy—California red fir, lodgepole pine Forest understory—western needlegrass, mountain big sagebrush, mountain brome, lupine, currant, wild mint, snowberry

Ecological site: F022AY118NV

Lithnip moist and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Summits of mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Ecological site: R022AY032NV—Alpine ridge

Rock outcrop

Composition: 0 to 2 percent

Landform: Mountains

Ecological site: None

Typic Cryaquolls and similar soils

Composition: 0 to 2 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 4 to 30 percent

Landform: Flood plains

Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

Aspocket and similar soils

Composition: 0 to 1 percent

Slope: 4 to 15 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

262—Domehill-Kiote association

Map Unit Setting

MLRA: 26
 Landscape: Mountains
 Elevation: 8,000 to 9,000
 Precipitation: 16 to 18 inches
 Air temperature: 41 to 43 degrees Fahrenheit
 Frost-free period: 50 to 70 days

Composition

Domehill very gravelly ashy sandy loam, cool, 4 to 30 percent slopes—50 percent
 Kiote gravelly ashy loam, 15 to 50 percent slopes—35 percent
 Vitrandic Argicryolls very gravelly ashy fine sandy loam, 8 to 30 percent slopes—4 percent
 Vitrandic Argicryolls gravelly ashy loam, 15 to 50 percent slopes—4 percent
 Vitrandic Argicryolls gravelly ashy sandy loam, 4 to 30 percent slopes—3 percent
 Lithic Argicryolls extremely bouldery sandy loam, 8 to 30 percent slopes—2 percent
 Rock outcrop—1 percent
 Cumulic Cryaquolls very fine sandy loam, 2 to 15 percent slopes—1 percent

Component Description

Domehill and similar soils

Landform: Mountains
 Slope: 4 to 30 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash
 Typical vegetation: Pine needlegrass, bluegrass, low sagebrush, other perennial forbs

Typical profile:

Surface rock fragments: About 35 percent gravel, 10 percent cobbles, 2 percent stones
 Layer 1—0 to 2 inches; very gravelly ashy sandy loam
 Layer 2—2 to 8 inches; very gravelly ashy loam

Layer 3—8 to 13 inches; very gravelly ashy clay loam
 Layer 4—13 to 23 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 7 to 14 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R026XY028NV—Mountain ridge

Component Description

Kiote and similar soils

Landform: Mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash
 Typical vegetation: Western needlegrass, Nevada bluegrass, prairie Junegrass, spike fescue, snowberry, other perennial forbs, mountain big sagebrush, sedge

Typical profile:

Surface rock fragments: About 25 percent gravel, 5 percent cobbles
 Layer 1—0 to 10 inches; gravelly ashy loam
 Layer 2—10 to 17 inches; very gravelly loam
 Layer 3—17 to 30 inches; very gravelly loam
 Layer 4—30 to 60 inches; extremely gravelly loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 6 inches
 Present flooding: None
 Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6e

Ecological site: R026XY109NV—Loamy slope 16+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Vitrantic Argicryolls and similar soils

Composition: 0 to 4 percent

Classification: Clayey-skeletal, smectitic Vitrantic Argicryolls

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Letterman needlegrass, prairie junegrass, bluegrass, low sagebrush, other perennial forbs

Ecological site: R026XY039NV—Loamy slope 14+ P.Z.

Vitrantic Argicryolls and similar soils

Composition: 0 to 4 percent

Classification: Loamy-skeletal, mixed, superactive Vitrantic Argicryolls

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Letterman needlegrass, western needlegrass, mountain big sagebrush, slender buckwheat, basin wildrye, Nevada bluegrass, other perennial forbs

Ecological site: R026XY038NV—Loamy slope 14+ P.Z.

Vitrantic Argicryolls and similar soils

Composition: 0 to 3 percent

Classification: Loamy-skeletal, mixed, superactive Vitrantic Argicryolls

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen
Forest understory—other perennial forbs, mountain brome, slender wheatgrass, muttongrass, snowberry

Ecological site: F026XY066NV

Lithic Argicryolls and similar soils

Composition: 0 to 2 percent

Classification: Loamy-skeletal, mixed, superactive Lithic Argicryolls

Slope: 8 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Needlegrass, bluegrass, spike fescue, mountain big sagebrush, curleaf mountainmahogany

Ecological site: R026XY009NV—Mahogany Savanna

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls

Slope: 2 to 15 percent

Landform: Dissected plains

Typical vegetation: Sedge, tufted hairgrass, meadow barley, rush, bluegrass, other perennial forbs

Ecological site: R026XY054NV—Wet meadow 14+ P.Z.

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

270—Duco-Smallcone-Cagle association

Map Unit Setting

MLRA: 26

Landscape: Mountains

Elevation: 5,000 to 6,000

Precipitation: 12 to 14 inches

Air temperature: 46 to 48 degrees Fahrenheit

Frost-free period: 80 to 90 days

Composition

Duco very stony sandy loam, 15 to 50 percent slopes—40 percent

Smallcone very gravelly coarse sandy loam, 15 to 50 percent slopes—30 percent

Cagle very stony clay loam, 15 to 30 percent slopes—15 percent

Nosrac very stony loam, 30 to 50 percent slopes—5 percent

Rock outcrop—3 percent

Indiano stony sandy loam, 30 to 50 percent slopes—3 percent

Fluvaquentic Endoaquolls gravelly loam, 2 to 8 percent slopes—1 percent

Fluvaquentic Haploxerolls very cobbly sandy loam, 2 to 8 percent slopes—1 percent
 Reywat stony loam, 30 to 50 percent slopes—1 percent
 Tunnison very stony clay, 4 to 15 percent slopes—1 percent

Component Description

Duco and similar soils

Landform: Mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Forest canopy—singleleaf pinyon
 Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush
 Site index: Singleleaf pinyon—65 at an age base of 0 years

Typical profile:

Surface rock fragments: About 5 percent stones, 5 percent cobbles, 15 percent gravel
 Layer 1—0 to 3 inches; very stony sandy loam
 Layer 2—3 to 5 inches; gravelly loam
 Layer 3—5 to 18 inches; very gravelly clay loam
 Layer 4—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)
 Available water capacity: About 1.6 inches
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F026XY065NV

Component Description

Cagle and similar soils

Landform: Mountains
 Slope: 15 to 30 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: F026XY044NV

Component Description

Smallcone and similar soils

Landform: Mountains
 Slope: 15 to 50 percent
 Parent material: Residuum derived from hydrothermally altered andesite
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs
 Site index: Jeffrey pine—35

Typical profile:

Surface rock fragments: About 55 percent gravel, 5 percent cobbles
 Layer 1—0 to 3 inches; very gravelly coarse sandy loam
 Layer 2—3 to 6 inches; extremely gravelly coarse sandy loam
 Layer 3—6 to 16 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (paralithic): 4 to 10 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 0.4 inch
 Present flooding: None
 Present ponding: None

Typical vegetation: Forest canopy—singleleaf pinyon
 Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush
 Site index: Singleleaf pinyon—65 at an age base of 0 years

Typical profile:

Surface rock fragments: About 5 percent stones, 5 percent cobbles, 15 percent gravel
 Layer 1—0 to 4 inches; very stony clay loam
 Layer 2—4 to 12 inches; gravelly clay loam
 Layer 3—12 to 28 inches; gravelly clay

Layer 4—28 to 38 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): Moderately Low, (Permeability class: Slow)

Available water capacity: About 4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F026XY044NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Nosrac and similar soils

Composition: 0 to 5 percent

Slope: 30 to 50 percent

Landform: Mountains

Typical vegetation: Mountain brome, needlegrass, basin wildrye, muttongrass, mountain big sagebrush, antelope bitterbrush

Ecological site: R026XY005NV—Loamy 12-14 P.Z.

Indiano and similar soils

Composition: 0 to 3 percent

Slope: 30 to 50 percent

Landform: Mountains

Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, bluegrass, other perennial forbs, antelope bitterbrush

Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Rock outcrop

Composition: 0 to 3 percent

Landform: Ridges

Ecological site: None

Fluvaquentic Endoaquolls and similar soils

Composition: 0 to 1 percent

Classification: Fine-loamy, mixed, superactive, mesic Fluvaquentic Endoaquolls

Slope: 2 to 8 percent

Landform: Stream terraces

Typical vegetation: Sedge, meadow barley, rush, creeping wildrye, Nevada bluegrass, other perennial forbs

Ecological site: R026XY003NV—Wet meadow 10-14 P.Z.

Fluvaquentic Haploxerolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive, mesic Fluvaquentic Haploxerolls

Slope: 2 to 8 percent

Landform: Drainageways

Typical vegetation: Sedge, basin wildrye, creeping wildrye, Nevada bluegrass, Woods' rose, yellow willow, silver buffaloberry

Ecological site: R026XY073NV—Streambank

Reywat and similar soils

Composition: 0 to 1 percent

Slope: 30 to 50 percent

Landform: Mountains

Typical vegetation: Indian ricegrass, desert needlegrass, Thurber needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R026XY015NV—Shallow loam 10-12 P.Z.

Tunnison and similar soils

Composition: 0 to 1 percent

Slope: 4 to 15 percent

Landform: Mountains

Typical vegetation: Sandberg bluegrass, littleleaf horsebrush, bottlebrush squirreltail, other perennial grasses, other perennial forbs, low sagebrush, spiny hopsage, other shrubs

Ecological site: R026XY027NV—Churning clay 8-10 P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Crops and Pasture" section

"Engineering" and "Soil Properties" sections

271—Duco-Vetagrande-Pinenut association***Map Unit Setting***

MLRA: 26
 Landscape: Mountains
 Elevation: 6,200 to 8,000
 Precipitation: 12 to 16 inches
 Air temperature: 43 to 45 degrees Fahrenheit
 Frost-free period: 70 to 80 days

Composition

Duco very stony sandy loam, 15 to 50 percent slopes—40 percent
 Vetagrande very gravelly sandy loam, 15 to 50 percent slopes—25 percent
 Pinenut very stony sandy loam, 15 to 50 percent slopes—20 percent
 Cagle very stony clay loam, 15 to 50 percent slopes—6 percent
 Aridic Argixerolls very stony loam, 30 to 50 percent slopes—4 percent
 Rock outcrop—3 percent
 Devada very stony loam, 4 to 30 percent slopes—2 percent

Component Description**Duco and similar soils**

Landform: Mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Forest canopy—singleleaf pinyon
 Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush
 Site index: Singleleaf pinyon—65 at an age base of 0 years

Typical profile:

Surface rock fragments: About 5 percent cobbles, 15 percent gravel, 5 percent stones
 Layer 1—0 to 3 inches; very stony sandy loam
 Layer 2—3 to 5 inches; gravelly loam
 Layer 3—5 to 18 inches; very gravelly clay loam
 Layer 4—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone):
 Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 1.6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F026XY044NV

Component Description**Vetagrande and similar soils**

Landform: Mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Columbia needlegrass, western needlegrass, basin wildrye, bluegrass, antelope bitterbrush, mountain big sagebrush, snowberry

Typical profile:

Surface rock fragments: About 45 percent gravel
 Layer 1—0 to 3 inches; very gravelly sandy loam
 Layer 2—3 to 9 inches; very gravelly sandy loam
 Layer 3—9 to 25 inches; very gravelly sandy clay loam
 Layer 4—25 to 60 inches; very gravelly sandy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone):
 Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R026XY040NV—Gravelly loam 14+ P.Z.

Component Description

Pinenut and similar soils

Landform: Mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Forest canopy—singleleaf pinyon
Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush

Site index: Singleleaf pinyon—65 at an age base of 0 years

Typical profile:

Surface rock fragments: About 50 percent gravel, 10 percent cobbles, 5 percent stones

Layer 1—0 to 1 inch; very stony sandy loam

Layer 2—1 to 6 inches; very gravelly sandy loam

Layer 3—6 to 19 inches; very gravelly sandy clay loam

Layer 4—19 to 29 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F026XY044NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Cagle and similar soils

Composition: 0 to 6 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—singleleaf pinyon
Forest understory—needlegrass, muttongrass,

mountain big sagebrush, currant, snowberry, antelope bitterbrush

Ecological site: F026XY044NV

Aridic Argixerolls and similar soils

Composition: 0 to 4 percent

Classification: Loamy-skeletal, mixed, superactive, frigid
Aridic Argixerolls

Slope: 30 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—antelope bitterbrush, muttongrass, mountain big sagebrush, currant

Ecological site: F026XY071NV

Rock outcrop

Composition: 0 to 3 percent

Landform: Ridges

Ecological site: None

Devada and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Thurber needlegrass, low sagebrush, bluegrass, other perennial forbs, antelope bitterbrush

Ecological site: R026XY023NV—Claypan 10-14 P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

280—Longcreek-Devada association

Map Unit Setting

MLRA: 26

Landscape: Mountains

Elevation: 5,600 to 6,200

Precipitation: 10 to 14 inches

Air temperature: 45 to 48 degrees Fahrenheit

Frost-free period: 70 to 90 days

Composition

Longcreek very stony loam, 8 to 30 percent slopes—50 percent

Devada very stony loam, 2 to 8 percent slopes—35 percent

Burnborough very stony loam, 15 to 50 percent slopes—6 percent
 Duco very stony sandy loam, 15 to 50 percent slopes—5 percent
 Rock outcrop—3 percent
 Fluvaquent Haploxerolls very cobbly sandy loam, 2 to 8 percent slopes—1 percent

Component Description

Longcreek and similar soils

Landform: Mountains
 Slope: 8 to 30 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Mountain big sagebrush, other perennial forbs, basin wildrye, muttongrass, antelope bitterbrush, needlegrass

Typical profile:

Surface rock fragments: About 10 percent stones, 5 percent cobbles, 20 percent gravel
 Layer 1—0 to 3 inches; very stony loam
 Layer 2—3 to 6 inches; very cobbly clay loam
 Layer 3—6 to 14 inches; very cobbly clay
 Layer 4—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately Low, (Permeability class: Slow)
 Available water capacity: About 1.2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R026XY048NV—Loamy slope 12-14 P.Z.

Component Description

Devada and similar soils

Landform: Mountains
 Slope: 2 to 8 percent
 Parent material: Residuum derived from volcanic rocks
 Typical vegetation: Thurber needlegrass, low sagebrush, bluegrass, other perennial forbs, antelope bitterbrush

Typical profile:

Surface rock fragments: About 5 percent stones, 5 percent cobbles, 15 percent gravel
 Layer 1—0 to 4 inches; very stony loam
 Layer 2—4 to 5 inches; clay loam
 Layer 3—5 to 13 inches; gravelly clay
 Layer 4—13 to 23 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately Low, (Permeability class: Slow)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R026XY023NV—Claypan 10-14 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Burnborough and similar soils

Composition: 0 to 6 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Needlegrass, mountain brome, basin wildrye, muttongrass, mountain big sagebrush, antelope bitterbrush
 Ecological site: R026XY005NV—Loamy 12-14 P.Z.

Duco and similar soils

Composition: 0 to 5 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—singleleaf pinyon
 Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush
 Ecological site: F026XY044NV

Rock outcrop

Composition: 0 to 3 percent
 Landform: Ridges

Ecological site: None

Fluvaquentic Haploxerolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive, mesic Fluvaquentic Haploxerolls

Slope: 2 to 8 percent

Landform: Stream terraces

Typical vegetation: Sedge, basin wildrye, creeping wildrye, Nevada bluegrass, Woods' rose, yellow willow, silver buffaloberry

Ecological site: R026XY073NV—Streambank

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Crops and Pasture" section

"Engineering" and "Soil Properties" sections

290—Pernty-Chen association

Map Unit Setting

MLRA: 26

Landscape: Mountains

Elevation: 7,000 to 7,600

Precipitation: 12 to 14 inches

Air temperature: 41 to 45 degrees Fahrenheit

Frost-free period: 70 to 80 days

Composition

Pernty very gravelly loam, 8 to 30 percent slopes—55 percent

Chen very gravelly loam, 4 to 15 percent slopes—30 percent

Vetagrande very gravelly sandy loam, 8 to 30 percent slopes—9 percent

Welch loam, 4 to 15 percent slopes—2 percent

Pinenut very stony sandy loam, 15 to 50 percent slopes—2 percent

Joecut very gravelly peaty loam, 8 to 30 percent slopes—2 percent

Component Description

Pernty and similar soils

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Mountain big sagebrush, other perennial forbs, basin wildrye, muttongrass, antelope bitterbrush, needlegrass

Typical profile:

Surface rock fragments: About 35 percent gravel

Layer 1—0 to 5 inches; very gravelly loam

Layer 2—5 to 15 inches; very gravelly clay loam

Layer 3—15 to 25 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 1.4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R026XY048NV—Loamy slope 12-14 P.Z.

Component Description

Chen and similar soils

Landform: Mountains

Slope: 4 to 15 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Thurber needlegrass, low sagebrush, prairie Junegrass, bluegrass

Typical profile:

Surface rock fragments: About 35 percent gravel

Layer 1—0 to 7 inches; very gravelly loam

Layer 2—7 to 17 inches; very gravelly clay

Layer 3—17 to 27 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches

Saturated hydraulic conductivity class (root zone): Low,
(Permeability class: Very slow)
Available water capacity: About 1.4 inches
Present flooding: None
Present ponding: None
Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
Ecological site: R026XY078NV—Claypan 12-14 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Vetagrande and similar soils

Composition: 0 to 9 percent
Slope: 8 to 30 percent
Landform: Mountains
Typical vegetation: Columbia needlegrass, western needlegrass, basin wildrye, bluegrass, antelope bitterbrush, mountain big sagebrush, snowberry
Ecological site: R026XY040NV—Gravelly loam 14+ P.Z.

Joecut and similar soils

Composition: 0 to 2 percent
Slope: 8 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy—white fir Forest understory—needlegrass, bluegrass, other perennial forbs, Ceanothus, snowberry
Ecological site: F022AY108NV

Pinenut and similar soils

Composition: 0 to 2 percent
Slope: 15 to 50 percent
Landform: Mountains
Typical vegetation: Forest canopy—singleleaf pinyon Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush
Ecological site: F026XY044NV

Welch and similar soils

Composition: 0 to 2 percent
Slope: 4 to 15 percent
Landform: Alluvial fans
Typical vegetation: Sedge, tufted hairgrass, meadow barley, rush, bluegrass, other perennial forbs
Ecological site: R026XY054NV—Wet meadow 14+ P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
"Range" section
"Forest land" section
"Engineering" and "Soil Properties" sections

310—Bagval-Wetbag complex, 0 to 8 percent slopes

Map Unit Setting

MLRA: 22A
Landscape: Mountain valleys or canyons
Elevation: 6,000 to 7,000
Precipitation: 16 to 24 inches
Air temperature: 39 to 45 degrees Fahrenheit
Frost-free period: 40 to 70 days

Composition

Bagval clay loam, 0 to 8 percent slopes—40 percent
Bagval clay loam, moist, 0 to 8 percent slopes—25 percent
Wetbag peaty silt loam, 0 to 8 percent slopes—15 percent
Wetbag clay, moist, 0 to 8 percent slopes—10 percent
Chenhigh very gravelly sandy loam, 4 to 15 percent slopes—5 percent
Heenlake very stony sandy loam, 8 to 30 percent slopes—5 percent

Component Description

Bagval and similar soils

Landform: Stream terraces
Slope: 0 to 8 percent
Parent material: Alluvium from volcanic rocks
Typical vegetation: Sedge, bluegrass, other perennial forbs, low sagebrush

Typical profile:

Surface rock fragments: About 15 percent gravel
Layer 1—0 to 2 inches; clay loam
Layer 2—2 to 9 inches; clay
Layer 3—9 to 30 inches; clay
Layer 4—30 to 60 inches; clay

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone): Low,
 (Permeability class: Very slow)
 Available water capacity: About 10 inches
 Present flooding: Rare
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 4e
 Ecological site: R022AY036NV—Moist Claypan

Component Description

Bagval and similar soils

Landform: Stream terraces
 Slope: 0 to 8 percent
 Parent material: Alluvium from volcanic rocks
 Typical vegetation: Sedge, mat muhly, bluegrass, other
 perennial forbs, mountain silver sagebrush

Typical profile:

Surface rock fragments: About 10 percent gravel
 Layer 1—0 to 2 inches; clay loam
 Layer 2—2 to 9 inches; clay
 Layer 3—9 to 30 inches; clay
 Layer 4—30 to 60 inches; clay

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: Medium
 Saturated hydraulic conductivity class (root zone): Low,
 (Permeability class: Very slow)
 Available water capacity: About 10 inches
 Present flooding: Rare
 Present ponding: None
 Water table: Present
 Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 4e
 Ecological site: R022AY037NV—Clay basin

Component Description

Wetbag and similar soils

Landform: Stream terraces
 Slope: 0 to 8 percent
 Parent material: Alluvium from volcanic rocks
 Typical vegetation: Creeping bentgrass, sedge, tufted
 hairgrass, Baltic rush, bluegrass, other perennial
 grasses, other perennial forbs

Typical profile:

Layer 1—0 to 2 inches; peaty silt loam
 Layer 2—2 to 6 inches; clay
 Layer 3—6 to 15 inches; clay
 Layer 4—15 to 26 inches; clay
 Layer 5—26 to 46 inches; clay
 Layer 6—46 to 60 inches; clay

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: Very high
 Saturated hydraulic conductivity class (root zone): Low,
 (Permeability class: Very slow)
 Available water capacity: About 10 inches
 Present flooding: Rare
 Present ponding: None
 Water table: Present
 Natural drainage class: Poorly drained

Interpretive Groups

Nonirrigated land capability: 6w
 Ecological site: R022AY017NV—Semi-wet meadow

Component Description

Wetbag and similar soils

Landform: Stream terraces
 Slope: 0 to 8 percent
 Parent material: Alluvium from volcanic rocks
 Typical vegetation: Nebraska sedge, tufted hairgrass,
 Baltic rush, other perennial forbs, other perennial
 grasses

Typical profile:

Layer 1—0 to 4 inches; slightly decomposed plant
 material
 Layer 2—4 to 6 inches; clay
 Layer 3—6 to 15 inches; clay
 Layer 4—15 to 26 inches; clay
 Layer 5—26 to 46 inches; clay
 Layer 6—46 to 60 inches; clay

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: Very high
 Saturated hydraulic conductivity class (root zone): Low,
 (Permeability class: Very slow)
 Available water capacity: About 10 inches

Present flooding: Occasional
 Present ponding: None
 Water table: Present
 Natural drainage class: Very poorly drained

Interpretive Groups

Nonirrigated land capability: 6w
 Ecological site: R022AY016NV—Wet meadow

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Chenhigh and similar soils

Composition: 0 to 5 percent
 Slope: 4 to 15 percent
 Landform: Shoulders of mountains
 Typical vegetation: Needlegrass, Thurber's needlegrass, mountain brome, bluegrass, other perennial forbs, low sagebrush, antelope bitterbrush
 Ecological site: R022AY028NV—Claypan 16+ P.Z.

Heenlake and similar soils

Composition: 0 to 5 percent
 Slope: 8 to 30 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush
 Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Engineering" and "Soil Properties" sections

320—Franktown-Rock outcrop complex, 50 to 75 percent slopes

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 5,500 to 7,000
 Precipitation: 16 to 30 inches
 Air temperature: 39 to 45 degrees Fahrenheit
 Frost-free period: 50 to 70 days

Composition

Franktown extremely gravelly sandy loam, 50 to 75 percent slopes—75 percent
 Rock outcrop—10 percent
 Toiyabe extremely bouldery loamy coarse sand, 30 to 75 percent slopes—7 percent
 Ultic Haploxerolls extremely gravelly sandy loam, 50 to 75 percent slopes—6 percent
 Aspocket gravelly sandy loam, 4 to 15 percent slopes—2 percent

Component Description

Franktown and similar soils

Landform: Mountain slopes
 Slope: 50 to 75 percent
 Parent material: Colluvium derived from metamorphic rock over residuum derived from metamorphic rock
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
 Site index: Jeffrey pine—42

Typical profile:

Surface rock fragments: About 35 percent gravel, 30 percent cobbles, 10 percent stones
 Layer 1—0 to 0.4 inch; extremely gravelly slightly decomposed plant material
 Layer 2—0.4 to 5 inches; extremely gravelly sandy loam
 Layer 3—5 to 16 inches; very gravelly fine sandy loam
 Layer 4—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 6 to 20 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 1.0 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: F022AY116NV

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Toiyabe and similar soils**

Composition: 0 to 7 percent

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Ultic Haploxerolls and similar soils

Composition: 0 to 6 percent

Classification: Loamy-skeletal, mixed, frigid Ultic Haploxerolls

Slope: 50 to 75 percent

Landform: Mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—needlegrass, bluegrass, other perennial forbs, Ceanothus, snowberry

Ecological site: F022AY108NV

Aspocket and similar soils

Composition: 0 to 2 percent

Slope: 4 to 15 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

330—Oest very bouldery sandy loam, 2 to 8 percent slopes***Map Unit Setting***

MLRA: 26

Landscape: Fan piedmont

Elevation: 5,000 to 5,500

Precipitation: 12 to 14 inches

Air temperature: 47 to 51 degrees Fahrenheit

Frost-free period: 80 to 90 days

Composition

Oest very bouldery sandy loam, 2 to 8 percent slopes—85 percent

Mottskel very bouldery loamy coarse sand, 2 to 15 percent slopes—10 percent

Oest very bouldery sandy loam, 8 to 30 percent slopes—5 percent

Component Description**Oest and similar soils**

Landform: Terraces

Slope: 2 to 8 percent

Parent material: Alluvium from mixed rock sources

Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, bluegrass, other perennial forbs, antelope bitterbrush

Typical profile:

Surface rock fragments: About 2 percent boulders, 1 percent stones, 5 percent cobbles, 20 percent gravel

Layer 1—0 to 4 inches; very bouldery sandy loam

Layer 2—4 to 10 inches; very bouldery sandy loam

Layer 3—10 to 60 inches; very bouldery sandy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Irrigated land capability: 4s

Nonirrigated land capability: 6s

Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Mottskel and similar soils**

Composition: 0 to 10 percent

Slope: 2 to 15 percent
 Landform: Alluvial fans
 Typical vegetation: Indian ricegrass, mountain big sagebrush, needleandthread, antelope bitterbrush
 Ecological site: R026XY008NV—Granitic fan 10-12 P.Z.

Oest and similar soils

Composition: 0 to 5 percent
 Slope: 8 to 30 percent
 Landform: Terraces
 Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, bluegrass, other perennial forbs, antelope bitterbrush
 Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Crops and Pasture" section
 "Engineering" and "Soil Properties" sections

340—Aspocket association

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 7,000 to 10,000
 Precipitation: 20 to 35 inches
 Air temperature: 36 to 43 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Aspocket gravelly sandy loam, 4 to 30 percent slopes—55 percent
 Aspocket gravelly sandy loam, moist, 4 to 30 percent slopes—30 percent
 Hawkinspeak very gravelly sandy loam, moist, 8 to 30 percent slopes—5 percent
 Angelwhine extremely gravelly coarse sandy loam, moist, 4 to 30 percent slopes—5 percent
 Joecut very gravelly peaty loam, 4 to 30 percent slopes—3 percent
 Monibasin gravelly sandy loam, 4 to 15 percent slopes—1 percent
 Leroman very gravelly sandy loam, 4 to 30 percent slopes—1 percent

Component Description

Aspocket and similar soils

Landform: Mountains

Slope: 4 to 30 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry
 Site index: Quaking aspen—40 at an age base of 50 years

Typical profile:

Surface rock fragments: About 2 percent stones, 15 percent gravel
 Layer 1—0 to 13 inches; gravelly sandy loam
 Layer 2—13 to 38 inches; very stony loam
 Layer 3—38 to 54 inches; gravelly clay loam
 Layer 4—54 to 64 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
 Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)
 Available water capacity: About 7 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6e
 Ecological site: F022AY103NV

Component Description

Aspocket and similar soils

Landform: Mountains
 Slope: 4 to 30 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Needlegrass, mountain brome, other perennial forbs, quaking aspen, snowberry

Typical profile:

Surface rock fragments: About 2 percent stones, 15 percent gravel
 Layer 1—0 to 13 inches; gravelly sandy loam
 Layer 2—13 to 38 inches; very stony loam
 Layer 3—38 to 54 inches; gravelly clay loam

Layer 4—54 to 64 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 7 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6e

Ecological site: R022AY046NV—Aspen thicket

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Angelwhine and similar soils

Composition: 0 to 5 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush

Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Hawkinspeak and similar soils

Composition: 0 to 5 percent

Slope: 8 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush

Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Joecut and similar soils

Composition: 0 to 3 percent

Slope: 4 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—white fir Forest understory—needlegrass, bluegrass, other perennial forbs, Ceanothus, snowberry

Ecological site: F022AY108NV

Leroman and similar soils

Composition: 0 to 1 percent

Slope: 4 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain brome, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY030NV—Gravelly loam 14-16 P.Z.

Monibasin and similar soils

Composition: 0 to 1 percent

Slope: 4 to 15 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, sedge, lupine, mountain big sagebrush

Ecological site: R022AY027NV—Mountain basin

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

350—Leroman-Chenhigh-Celeridge association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 6,500 to 8,000

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Leroman very gravelly sandy loam, 8 to 30 percent slopes—45 percent

Chenhigh very gravelly sandy loam, 4 to 30 percent slopes—20 percent

Celeridge extremely bouldery sandy loam, 4 to 30 percent slopes—10 percent

Dogbed very gravelly sandy loam, 15 to 30 percent slopes—10 percent

Joecut very gravelly peaty loam, 8 to 30 percent slopes—4 percent

Loope very gravelly sandy loam, 8 to 30 percent slopes—3 percent

Joecut very gravelly sandy loam, dry, 8 to 30 percent slopes—2 percent

Aspocket gravelly sandy loam, 4 to 15 percent slopes—2 percent

Rock outcrop—1 percent

Bagval clay loam, 0 to 8 percent slopes—1 percent

Wetbag clay, moist, 4 to 15 percent slopes—1 percent

Wetbag peaty silt loam, 0 to 8 percent slopes—1 percent

Component Description

Leroman and similar soils

Landform: Backslopes of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, mountain brome, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 9 percent stones, 5 percent cobbles, 30 percent gravel

Layer 1—0 to 5 inches; very gravelly sandy loam

Layer 2—5 to 23 inches; very gravelly sandy clay loam

Layer 3—23 to 34 inches; very gravelly sandy clay loam

Layer 4—34 to 43 inches; bedrock

Layer 5—43 to 53 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY030NV—Gravelly loam 14-16 P.Z.

Component Description

Chenhigh and similar soils

Landform: Shoulders of mountains

Slope: 4 to 30 percent

Parent material: Residuum from volcanic rocks

Typical vegetation: Needlegrass, Thurber's needlegrass, mountain brome, bluegrass, other perennial forbs, low sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 9 percent stones, 5 percent cobbles, 30 percent gravel

Layer 1—0 to 3 inches; very gravelly sandy loam

Layer 2—3 to 6 inches; very gravelly clay loam

Layer 3—6 to 10 inches; very gravelly clay

Layer 4—10 to 18 inches; extremely gravelly clay

Layer 5—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately Low, (Permeability class: Slow)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY028NV—Claypan 16+ P.Z.

Component Description

Celeridge and similar soils

Landform: Shoulders of mountains

Slope: 4 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Typical profile:

Surface rock fragments: About 20 percent boulders, 15 percent gravel, 10 percent stones, 10 percent cobbles

Layer 1—0 to 3 inches; extremely bouldery sandy loam

Layer 2—3 to 8 inches; extremely gravelly sandy loam

Layer 3—8 to 19 inches; extremely gravelly sandy clay loam

Layer 4—19 to 29 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderate)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY024NV—Mahogany Savanna

Component Description

Dogbed and similar soils

Landform: Backslopes of mountains

Slope: 15 to 30 percent

Parent material: Colluvium derived from andesite and tuff breccia

Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush

Typical profile:

Surface rock fragments: About 50 percent gravel, 1 percent stones, 5 percent cobbles

Layer 1—0 to 14 inches; very gravelly sandy loam

Layer 2—14 to 50 inches; very gravelly sandy clay loam

Layer 3—50 to 60 inches; very gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Joecut and similar soils

Composition: 0 to 4 percent

Slope: 8 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—white fir Forest understory—needlegrass, bluegrass, other perennial forbs, Ceanothus, snowberry

Ecological site: F022AY108NV

Loope and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Aspocket and similar soils

Composition: 0 to 2 percent

Slope: 4 to 15 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Joecut and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Bagval and similar soils

Composition: 0 to 1 percent

Slope: 0 to 8 percent

Landform: Fan remnants

Typical vegetation: Sedge, bluegrass, other perennial forbs, low sagebrush

Ecological site: R022AY036NV—Moist Claypan

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Wetbag and similar soils

Composition: 0 to 1 percent

Slope: 4 to 15 percent

Landform: Stream terraces

Typical vegetation: Nebraska sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses

Ecological site: R022AY016NV—Wet meadow

Wetbag and similar soils

Composition: 0 to 1 percent

Slope: 0 to 8 percent

Landform: Stream terraces

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial forbs, other perennial grasses

Ecological site: R022AY017NV—Semi-wet meadow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

360—Monibasin-Vermdig association**Map Unit Setting**

MLRA: 22A

Landscape: Mountains

Elevation: 7,500 to 8,500

Precipitation: 16 to 24 inches

Air temperature: 37 to 43 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Monibasin gravelly sandy loam, 4 to 15 percent slopes—70 percent

Vermdig loam, 2 to 8 percent slopes—15 percent

Leroman very gravelly sandy loam, 4 to 30 percent slopes—7 percent

Aspocket gravelly sandy loam, 4 to 15 percent slopes—2 percent

Celeridge extremely bouldery sandy loam, 4 to 30 percent slopes—2 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 4 percent slopes—1 percent

Rock outcrop—1 percent

Wetbag clay, moist, 4 to 15 percent slopes—1 percent

Wetbag peaty silt loam, 0 to 8 percent slopes—1 percent

Component Description**Monibasin and similar soils**

Landform: Backslopes of mountains

Slope: 4 to 15 percent

Parent material: Slope alluvium derived from volcanic rock

Typical vegetation: Western needlegrass, sedge, lupine, mountain big sagebrush

Typical profile:

Surface rock fragments: About 2 percent boulders, 20 percent gravel

Layer 1—0 to 15 inches; gravelly sandy loam

Layer 2—15 to 34 inches; extremely stony sandy loam

Layer 3—34 to 60 inches; very stony sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 7 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6e

Ecological site: R022AY027NV—Mountain basin

Component Description**Vermdig and similar soils**

Landform: Backslopes of mountains

Slope: 2 to 8 percent

Parent material: Slope alluvium from volcanic rocks

Typical vegetation: Mountain silver sagebrush, sedge, mat muhly, bluegrass, other perennial forbs, groundsel

Typical profile:

Surface rock fragments: About 10 percent gravel

Layer 1—0 to 2 inches; loam

Layer 2—2 to 13 inches; gravelly sandy clay loam

Layer 3—13 to 32 inches; gravelly loam

Layer 4—32 to 60 inches; gravelly clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 8 inches

Present flooding: None

Present ponding: None

Water table: Present

Natural drainage class: Somewhat poorly drained

Interpretive Groups

Nonirrigated land capability: 6e

Ecological site: R022AY054NV—Moist mountain basin

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Leroman and similar soils

Composition: 0 to 7 percent

Slope: 4 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain brome, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY030NV—Gravelly loam 14-16 P.Z.

Aspocket and similar soils

Composition: 0 to 2 percent

Slope: 4 to 15 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Celeridge and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive

Cumulic Cryaquolls

Slope: 0 to 4 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Wetbag and similar soils

Composition: 0 to 1 percent

Slope: 4 to 15 percent

Landform: Stream terraces

Typical vegetation: Nebraska sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses

Ecological site: R022AY016NV—Wet meadow

Wetbag and similar soils

Composition: 0 to 1 percent

Slope: 0 to 8 percent

Landform: Stream terraces

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

370—Celeridge-Gerdog-Loope association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 6,500 to 8,000

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Celeridge extremely bouldery sandy loam, 8 to 30 percent slopes—30 percent
 Gerdog very gravelly sandy loam, 8 to 30 percent slopes—25 percent
 Loope very gravelly sandy loam, 15 to 50 percent slopes—20 percent
 Pinew very gravelly sandy loam, 15 to 50 percent slopes—10 percent
 Heenlake very stony sandy loam, 15 to 50 percent slopes—5 percent
 Joecut very gravelly sandy loam, dry, 15 to 50 percent slopes—4 percent
 Joecut very gravelly peaty loam, 30 to 50 percent slopes—2 percent
 Aspocket gravelly sandy loam, 4 to 30 percent slopes—1 percent
 Rock outcrop—1 percent
 Wetbag peaty silt loam, 0 to 8 percent slopes—1 percent
 Celeridge extremely bouldery sandy loam, moist, 4 to 30 percent slopes—1 percent

Component Description

Celeridge and similar soils

Landform: Shoulders of mountains
 Slope: 8 to 30 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Typical profile:

Surface rock fragments: About 20 percent boulders, 15 percent gravel, 10 percent cobbles, 10 percent stones
 Layer 1—0 to 3 inches; extremely bouldery sandy loam
 Layer 2—3 to 8 inches; extremely gravelly sandy loam
 Layer 3—8 to 19 inches; extremely gravelly sandy clay loam
 Layer 4—19 to 29 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R022AY024NV—Mahogany Savanna

Component Description

Gerdog and similar soils

Landform: Shoulders of mountains
 Slope: 8 to 30 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Needlegrass, Thurber's needlegrass, mountain brome, bluegrass, other perennial forbs, low sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 9 percent stones, 30 percent gravel, 5 percent cobbles
 Layer 1—0 to 3 inches; very gravelly sandy loam
 Layer 2—3 to 11 inches; very gravelly sandy clay loam
 Layer 3—11 to 21 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 7 to 14 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 1.1 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R022AY028NV—Claypan 16+ P.Z.

Component Description

Loope and similar soils

Landform: Shoulders of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent gravel, 2 percent stones, 5 percent cobbles
 Layer 1—0 to 1 inch; very gravelly sandy loam
 Layer 2—1 to 14 inches; extremely gravelly sandy clay loam
 Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 1.4 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Component Description

Pinew and similar soils

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Forest canopy—singleleaf pinyon
 Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush
 Site index: Singleleaf pinyon—75 at an age base of 0 years

Typical profile:

Surface rock fragments: About 25 percent gravel, 9 percent stones, 5 percent cobbles
 Layer 1—0 to 3 inches; very gravelly sandy loam
 Layer 2—3 to 8 inches; very gravelly sandy clay loam
 Layer 3—8 to 15 inches; very gravelly clay loam
 Layer 4—15 to 25 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F026XY044NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Heenlake and similar soils

Composition: 0 to 5 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush
 Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Joecut and similar soils

Composition: 0 to 4 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
 Ecological site: F022AY116NV

Joecut and similar soils

Composition: 0 to 2 percent
 Slope: 30 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Forest canopy—white fir Forest understory—needlegrass, bluegrass, other perennial forbs, Ceanothus, snowberry
 Ecological site: F022AY108NV

Aspocket and similar soils

Composition: 0 to 1 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender

wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Celeridge and similar soils

Composition: 0 to 1 percent

Slope: 4 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Needlegrass, bluegrass, other

perennial forbs, curleaf mountainmahogany,

snowberry

Ecological site: R022AY025NV—Mahogany thicket

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Wetbag and similar soils

Composition: 0 to 1 percent

Slope: 0 to 8 percent

Landform: Stream terraces

Typical vegetation: Creeping bentgrass, sedge, tufted

hairgrass, Baltic rush, bluegrass, other perennial

grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

380—Joecut-Celeridge-Gerdog association**Map Unit Setting**

MLRA: 22A

Landscape: Mountains

Elevation: 6,500 to 8,000

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Joecut very cobbly peaty loam, dry, 15 to 50 percent slopes—40 percent

Celeridge extremely bouldery sandy loam, 4 to 30 percent slopes—20 percent

Joecut very gravelly peaty loam, 15 to 50 percent slopes—15 percent

Gerdog very gravelly sandy loam, 4 to 30 percent slopes—10 percent

Leroman very gravelly sandy loam, 15 to 50 percent slopes—4 percent

Pinew very gravelly sandy loam, 30 to 75 percent slopes—3 percent

Loope very gravelly sandy loam, 15 to 50 percent slopes—2 percent

Newcone very gravelly sandy loam, 15 to 50 percent slopes—2 percent

Aspocket gravelly sandy loam, 8 to 30 percent slopes—1 percent

Cumulic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—1 percent

Rock outcrop—1 percent

Carshal very gravelly sandy loam, 30 to 50 percent slopes—1 percent

Component Description**Joecut and similar soils**

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Site index: Jeffrey pine—70

Typical profile:

Surface rock fragments: About 5 percent boulders, 15 percent gravel, 15 percent cobbles, 9 percent stones

Layer 1—0 to 1 inch; very cobbly slightly decomposed plant material

Layer 2—1 to 2 inches; very gravelly sandy loam

Layer 2—2 to 14 inches; very gravelly loam

Layer 3—14 to 40 inches; very gravelly clay loam

Layer 4—40 to 60 inches; very cobbly clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 10 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F022AY116NV

Component Description

Celeridge and similar soils

Landform: Shoulders of mountains
 Slope: 4 to 30 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Typical profile:

Surface rock fragments: About 20 percent boulders, 15 percent gravel, 10 percent cobbles, 10 percent stones
 Layer 1—0 to 3 inches; extremely bouldery sandy loam
 Layer 2—3 to 8 inches; extremely gravelly sandy loam
 Layer 3—8 to 19 inches; extremely gravelly sandy clay loam
 Layer 4—19 to 29 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R022AY024NV—Mahogany Savanna

Component Description

Joecut and similar soils

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Forest canopy—white fir Forest understory—needlegrass, bluegrass, other perennial forbs, Ceanothus, snowberry
 Site index: White fir—35 at an age base of 50 years

Typical profile:

Surface rock fragments: About 15 percent gravel, 5 percent boulders, 15 percent cobbles, 9 percent stones
 Layer 1—0 to 1 inch; slightly decomposed plant material
 Layer 2—1 to 2 inches; very gravelly peaty loam
 Layer 3—2 to 14 inches; very gravelly loam
 Layer 4—14 to 40 inches; very gravelly clay loam
 Layer 5—40 to 60 inches; very cobbly clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)
 Available water capacity: About 11 inches
 Present flooding: None
 Present ponding: None
 Water table: Present
 Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F022AY108NV

Component Description

Gerdog and similar soils

Landform: Shoulders of mountains
 Slope: 4 to 30 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Mountain brome, bluegrass, other perennial forbs, low sagebrush, antelope bitterbrush, needlegrass, Thurber's needlegrass

Typical profile:

Surface rock fragments: About 30 percent gravel, 9 percent stones, 5 percent cobbles
 Layer 1—0 to 3 inches; very gravelly sandy loam
 Layer 2—3 to 11 inches; very gravelly sandy clay loam
 Layer 3—11 to 21 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 7 to 14 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 1.1 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R022AY028NV—Claypan 16+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Leroman and similar soils

Composition: 0 to 4 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, mountain brome, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush
 Ecological site: R022AY030NV—Gravelly loam 14-16 P.Z.

Pinew and similar soils

Composition: 0 to 3 percent
 Slope: 30 to 75 percent
 Landform: Backslopes of mountains
 Typical vegetation: Forest canopy—singleleaf pinyon
 Forest understory—needlegrass, muttongrass,

mountain big sagebrush, currant, snowberry, antelope bitterbrush
 Ecological site: F026XY044NV

Loope and similar soils

Composition: 0 to 2 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush
 Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Newcone and similar soils

Composition: 0 to 2 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, greenleaf manzanita, antelope bitterbrush, currant, snowberry
 Ecological site: F022AY129NV

Aspocket and similar soils

Composition: 0 to 1 percent
 Slope: 8 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Carshal and similar soils

Composition: 0 to 1 percent
 Slope: 30 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Indian ricegrass, Thurber's needlegrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, other shrubs, other trees, other perennial grasses
 Ecological site: R022AY041NV—Eroded slope 14-20 P.Z.

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent
 Classification: Coarse-loamy, mixed, superactive
 Cumulic Cryaquolls
 Slope: 2 to 8 percent
 Landform: Dissected plains
 Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

381—Joecut-Heenlake association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 6,500 to 8,000

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Heenlake very stony sandy loam, 15 to 50 percent slopes—15 percent

Loope very gravelly sandy loam, 15 to 50 percent slopes—10 percent

Carshal very gravelly sandy loam, 15 to 50 percent slopes—3 percent

Celeridge extremely bouldery sandy loam, 8 to 30 percent slopes—2 percent

Joecut very gravelly sandy loam, dry, 4 to 15 percent slopes—2 percent

Chenhigh very gravelly sandy loam, 4 to 15 percent slopes—2 percent

Wolfcut very stony loam, 8 to 30 percent slopes—2 percent

Pinew very gravelly sandy loam, 15 to 50 percent slopes—1 percent

Aspocket gravelly sandy loam, 8 to 30 percent slopes—1 percent

Toiyabe extremely bouldery loamy coarse sand, 15 to 50 percent slopes—1 percent

Rock outcrop—1 percent

Joecut very gravelly sandy loam, dry, 15 to 50 percent slopes—30 percent

Joecut very gravelly peaty loam, 15 to 50 percent slopes—30 percent

Component Description

Joecut and similar soils

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Site index: Jeffrey pine—70

Typical profile:

Surface rock fragments: About 15 percent gravel, 15 percent cobbles, 9 percent stones, 5 percent boulders

Layer 1—0 to 2 inches; very gravelly sandy loam

Layer 2—2 to 14 inches; very gravelly loam

Layer 3—14 to 40 inches; very gravelly clay loam

Layer 4—40 to 60 inches; very cobbly clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 11 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY116NV

Component Description

Joecut and similar soils

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Forest canopy—white fir Forest understory—needlegrass, bluegrass, other perennial forbs, Ceanothus, snowberry

Site index: White fir—35 at an age base of 50 years

Typical profile:

Surface rock fragments: About 15 percent gravel, 15 percent cobbles, 9 percent stones, 5 percent boulders

Layer 1—0 to 1 inch; slightly decomposed plant material

Layer 2—1 to 2 inches; very gravelly peaty loam

Layer 3—2 to 14 inches; very gravelly loam

Layer 4—14 to 40 inches; very gravelly clay loam

Layer 5—40 to 60 inches; very cobbly clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 11 inches

Present flooding: None

Present ponding: None

Water table: Present

Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY108NV

Component Description

Heenlake and similar soils

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 20 percent gravel, 10 percent cobbles, 9 percent stones

Layer 1—0 to 6 inches; very stony sandy loam

Layer 2—6 to 18 inches; very gravelly clay loam

Layer 3—18 to 22 inches; very gravelly clay loam

Layer 4—22 to 32 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Component Description

Loope and similar soils

Landform: Shoulders of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent gravel, 2 percent stones, 5 percent cobbles

Layer 1—0 to 1 inch; very gravelly sandy loam

Layer 2—1 to 14 inches; extremely gravelly sandy clay loam

Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Carshal and similar soils**

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Indian ricegrass, Thurber's needlegrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, other shrubs, other trees, other perennial grasses

Ecological site: R022AY041NV—Eroded slope 14-20 P.Z.

Celeridge and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Chenhigh and similar soils

Composition: 0 to 2 percent

Slope: 4 to 15 percent

Landform: Shoulders of mountains

Typical vegetation: Needlegrass, Thurber's needlegrass, mountain brome, bluegrass, other perennial forbs, low sagebrush, antelope bitterbrush

Ecological site: R022AY028NV—Claypan 16+ P.Z.

Joecut and similar soils

Composition: 0 to 2 percent

Slope: 4 to 15 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy--Jeffrey pine Forest understory--other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Wolfcut and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Fan remnants

Typical vegetation: Forest canopy--Jeffrey pine Forest understory--other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Aspocket and similar soils

Composition: 0 to 1 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy--quaking aspen Forest understory--mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Pinew and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy--singleleaf pinyon Forest understory--needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush

Ecological site: F026XY044NV

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Toiyabe and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy--Jeffrey pine Forest understory--other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

382--Joecut association***Map Unit Setting***

MLRA: 22A

Landscape: Mountains

Elevation: 6,500 to 8,000

Precipitation: 20 to 30 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Joecut very gravelly sandy loam, dry, 15 to 50 percent slopes--55 percent

Joecut very gravelly peaty loam, 15 to 50 percent slopes--30 percent

Aspocket gravelly sandy loam, 8 to 30 percent slopes--5 percent

Heenlake very stony sandy loam, 15 to 50 percent slopes--4 percent

Burnlake extremely gravelly sandy loam, 8 to 30 percent slopes--3 percent

Rock outcrop --3 percent

Component Description**Joecut and similar soils**

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Forest canopy--Jeffrey pine Forest understory--other perennial forbs, mountain big sagebrush, snowberry, currant

Site index: Jeffrey pine—70

Typical profile:

Surface rock fragments: About 9 percent stones, 5 percent boulders, 15 percent gravel, 15 percent cobbles

Layer 1--0 to 2 inches; very gravelly sandy loam

Layer 2--2 to 14 inches; very gravelly loam

Layer 3--14 to 40 inches; very gravelly clay loam

Layer 4--40 to 60 inches; very cobbly clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 11 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY116NV

Component Description**Joecut and similar soils**

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Forest canopy--white fir Forest understory--needlegrass, bluegrass, other perennial forbs, Ceanothus, snowberry

Site index: White fir--35 at an age base of 50 years

Typical profile:

Surface rock fragments: About 15 percent gravel, 15 percent cobbles, 9 percent stones, 5 percent boulders

Layer 1--0 to 1 inch; slightly decomposed plant material

Layer 2--1 to 2 inches; very gravelly peaty loam

Layer 3--2 to 14 inches; very gravelly loam

Layer 4--14 to 40 inches; very gravelly clay loam

Layer 5--40 to 60 inches; very cobbly clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 11 inches

Present flooding: None

Present ponding: None

Water table: Present

Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY108NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Aspocket and similar soils

Composition: 0 to 5 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy--quaking aspen

Forest understory--mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Heenlake and similar soils

Composition: 0 to 4 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY022NV--Loamy slope 14-16 P.Z.

Burnlake and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy--Jeffrey pine Forest understory--other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Rock outcrop

Composition: 0 to 3 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

390--Heenlake-Loope-Chenhigh association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 6,500 to 8,000

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Heenlake very stony loam, 15 to 50 percent slopes--40 percent

Loope very gravelly sandy loam, 15 to 50 percent slopes--30 percent

Chenhigh very gravelly sandy loam, 4 to 30 percent slopes--15 percent

Celeridge extremely bouldery sandy loam, 4 to 30 percent slopes--2 percent

Joecut very gravelly sandy loam, dry, 15 to 50 percent slopes--2 percent

Dogbed very gravelly sandy loam, 15 to 50 percent slopes--2 percent

Carshal very gravelly sandy loam, 15 to 50 percent slopes--1 percent

Aspocket gravelly sandy loam, 4 to 30 percent slopes--1 percent

Pinew very gravelly sandy loam, 15 to 50 percent slopes--1 percent

Rock outcrop --1 percent

Newcone very gravelly sandy loam, 15 to 50 percent slopes--1 percent

Bagval clay loam, 0 to 8 percent slopes--1 percent

Bagval clay loam, moist, 0 to 8 percent slopes--1 percent

Wetbag peaty silt loam, 0 to 8 percent slopes--1 percent

Joecut very gravelly peaty loam, 15 to 50 percent slopes--1 percent

Component Description

Heenlake and similar soils

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 15 percent gravel, 15 percent cobbles, 9 percent stones, 5 percent boulders

Layer 1--0 to 6 inches; very stony loam

Layer 2--6 to 18 inches; very gravelly clay loam

Layer 3--18 to 22 inches; very gravelly clay loam

Layer 4--22 to 32 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Component Description

Loope and similar soils

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent gravel, 2 percent stones, 5 percent cobbles

Layer 1—0 to 1 inch; very gravelly sandy loam

Layer 2—1 to 14 inches; extremely gravelly sandy clay loam

Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Component Description

Chenhigh and similar soils

Landform: Shoulders of mountains

Slope: 4 to 30 percent

Parent material: Residuum from volcanic rocks

Typical vegetation: Needlegrass, Thurber's needlegrass, mountain brome, bluegrass, other perennial forbs, low sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent gravel, 9 percent stones, 5 percent cobbles

Layer 1—0 to 3 inches; very gravelly sandy loam

Layer 2—3 to 6 inches; very gravelly clay loam

Layer 3—6 to 10 inches; very gravelly clay

Layer 4—10 to 18 inches; extremely gravelly clay

Layer 5—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone):
Moderately Low, (Permeability class: Slow)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY028NV—Claypan 16+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Celeridge and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany
Ecological site: R022AY024NV—Mahogany Savanna

Dogbed and similar soils

Composition: 0 to 2 percent
Slope: 15 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush
Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Joecut and similar soils

Composition: 0 to 2 percent
Slope: 15 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
Ecological site: F022AY116NV

Aspocket and similar soils

Composition: 0 to 1 percent
Slope: 4 to 30 percent
Landform: Mountains
Typical vegetation: Forest canopy—quaking aspen Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry
Ecological site: F022AY103NV

Bagval and similar soils

Composition: 0 to 1 percent
Slope: 0 to 8 percent
Landform: Stream terraces
Typical vegetation: Sedge, bluegrass, other perennial forbs, low sagebrush
Ecological site: R022AY036NV—Moist Claypan

Carshal and similar soils

Composition: 0 to 1 percent
Slope: 15 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Indian ricegrass, Thurber's needlegrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, other shrubs, other trees, other perennial grasses
Ecological site: R022AY041NV—Eroded slope 14-20 P.Z.

Joecut and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy—white fir Forest understory—needlegrass, bluegrass, other perennial forbs, Ceanothus, snowberry
Ecological site: F022AY108NV

Newcone and similar soils

Composition: 0 to 1 percent
Slope: 15 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, greenleaf manzanita, antelope bitterbrush, currant, snowberry
Ecological site: F022AY129NV

Pinew and similar soils

Composition: 0 to 1 percent
Slope: 15 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy—singleleaf pinyon Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush
Ecological site: F026XY044NV

Rock outcrop

Composition: 0 to 1 percent
Landform: Mountains
Ecological site: None

Wetbag and similar soils

Composition: 0 to 1 percent
Slope: 0 to 8 percent
Landform: Stream terraces
Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs
Ecological site: R022AY017NV—Semi-wet meadow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section
"Forest land" section
"Engineering" and "Soil Properties" sections

391—Heenlake-Loope-Dogbed association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 6,500 to 8,000

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Heenlake very stony sandy loam, 15 to 50 percent slopes—40 percent

Loope very gravelly sandy loam, 15 to 50 percent slopes—25 percent

Dogbed very gravelly sandy loam, 30 to 50 percent slopes—20 percent

Aspocket gravelly sandy loam, 8 to 30 percent slopes—3 percent

Celeridge extremely bouldery sandy loam, 8 to 30 percent slopes—3 percent

Chenhigh very gravelly sandy loam, 4 to 30 percent slopes—2 percent

Joecut very gravelly sandy loam, dry, 15 to 50 percent slopes—2 percent

Pinew very gravelly sandy loam, 15 to 50 percent slopes—2 percent

Rock outcrop—1 percent

Pachic Argicryolls very stony sandy loam, 15 to 50 percent slopes—1 percent

Cumulic Cryaquolls very fine sandy loam, 2 to 15 percent slopes—1 percent

Component Description

Heenlake and similar soils

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 15 percent gravel, 15 percent cobbles, 9 percent stones, 5 percent boulders

Layer 1—0 to 6 inches; very stony sandy loam

Layer 2—6 to 18 inches; very gravelly clay loam

Layer 3—18 to 22 inches; very gravelly clay loam

Layer 4—22 to 32 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Component Description

Loope and similar soils

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent gravel, 2 percent stones, 5 percent cobbles

Layer 1—0 to 1 inch; very gravelly sandy loam

Layer 2—1 to 14 inches; extremely gravelly sandy clay loam

Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Component Description

Dogbed and similar soils

Landform: North facing backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from andesite and tuff breccia
Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush

Typical profile:

Surface rock fragments: About 50 percent gravel, 1 percent stones, 5 percent cobbles
Layer 1—0 to 14 inches; very gravelly sandy loam
Layer 2—14 to 50 inches; very gravelly sandy clay loam
Layer 3—50 to 60 inches; very gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches
Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
Available water capacity: About 6 inches
Present flooding: None
Present ponding: None
Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Aspocket and similar soils

Composition: 0 to 3 percent
Slope: 8 to 30 percent
Landform: Mountains
Typical vegetation: Forest canopy—quaking aspen
Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Celeridge and similar soils

Composition: 0 to 3 percent
Slope: 8 to 30 percent
Landform: Shoulders of mountains
Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany
Ecological site: R022AY024NV—Mahogany Savanna

Chenhigh and similar soils

Composition: 0 to 2 percent
Slope: 4 to 30 percent
Landform: Shoulders of mountains
Typical vegetation: Needlegrass, Thurber's needlegrass, mountain brome, bluegrass, other perennial forbs, low sagebrush, antelope bitterbrush
Ecological site: R022AY028NV—Claypan 16+ P.Z.

Joecut and similar soils

Composition: 0 to 2 percent
Slope: 15 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
Ecological site: F022AY116NV

Pinew and similar soils

Composition: 0 to 2 percent
Slope: 15 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy—singleleaf pinyon Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush
Ecological site: F026XY044NV

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent
Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls
Slope: 2 to 15 percent
Landform: Dissected plains
Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs
Ecological site: R022AY017NV—Semi-wet meadow

Pachic Argicryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, isotic Pachic Argicryolls

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain brome, muttongrass, other perennial grasses, other perennial forbs, mountain big sagebrush, bitter cherry, common chokecherry, snowberry

Ecological site: R022AY020NV—Prunus pocket

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

392—Heenlake-Loope association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 6,500 to 8,000

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Heenlake very stony sandy loam, 8 to 30 percent slopes—50 percent

Loope very gravelly sandy loam, 8 to 30 percent slopes—35 percent

Gerdog very gravelly sandy loam, 4 to 30 percent slopes—4 percent

Burchflat very gravelly sandy loam, 4 to 30 percent slopes—3 percent

Rock outcrop—2 percent

Celeridge extremely bouldery sandy loam, 8 to 30 percent slopes—2 percent

Murain very gravelly coarse sandy loam, 4 to 30 percent slopes—2 percent

Cumulic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—1 percent

Vermdig loam, 2 to 8 percent slopes—1 percent

Component Description

Heenlake and similar soils

Landform: Backslopes of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 15 percent gravel, 15 percent cobbles, 9 percent stones, 5 percent boulders

Layer 1—0 to 6 inches; very stony sandy loam

Layer 2—6 to 18 inches; very gravelly clay loam

Layer 3—18 to 22 inches; very gravelly clay loam

Layer 4—22 to 32 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Component Description

Loope and similar soils

Landform: Backslopes of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent gravel, 2 percent stones, 5 percent cobbles

Layer 1—0 to 1 inch; very gravelly sandy loam

Layer 2—1 to 14 inches; extremely gravelly sandy clay loam

Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Gerdog and similar soils

Composition: 0 to 4 percent

Slope: 4 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Low sagebrush, other perennial forbs, Thurber's needlegrass, pine needlegrass, western needlegrass

Ecological site: R022AY049NV—Claypan 14-16 P.Z.

Burchflat and similar soils

Composition: 0 to 3 percent

Slope: 4 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Celeridge and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Murain and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Moraines

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Rock outcrop

Composition: 0 to 2 percent

Landform: Mountains

Ecological site: None

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls

Slope: 2 to 8 percent

Landform: Dissected plains

Typical vegetation: Other perennial forbs, creeping bentgrass, Baltic rush, tufted hairgrass, sedge, other perennial grasses, bluegrass

Ecological site: R022AY017NV—Semi-wet meadow

Vermdig and similar soils

Composition: 0 to 1 percent

Slope: 2 to 8 percent

Landform: Footslopes of mountains

Typical vegetation: Mountain silver sagebrush, sedge, mat muhly, bluegrass, other perennial forbs, groundsel

Ecological site: R022AY054NV—Moist mountain basin

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

400—Pinew-Carshal-Loope association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 6,500 to 8,000

Precipitation: 16 to 24 inches
 Air temperature: 39 to 45 degrees Fahrenheit
 Frost-free period: 40 to 70 days

Composition

Pinew very gravelly sandy loam, 30 to 75 percent slopes—35 percent
 Carshal very gravelly sandy loam, 30 to 75 percent slopes—25 percent
 Loope very gravelly sandy loam, 30 to 75 percent slopes—15 percent
 Celeridge extremely bouldery sandy loam, 30 to 75 percent slopes—10 percent
 Dogbed very gravelly sandy loam, 30 to 75 percent slopes—5 percent
 Heenlake very stony sandy loam, 30 to 50 percent slopes—2 percent
 Joecut very gravelly peaty loam, 15 to 50 percent slopes—2 percent
 Joecut very gravelly sandy loam, dry, 30 to 50 percent slopes—2 percent
 Rock outcrop—2 percent
 Chenhigh very gravelly sandy loam, 4 to 30 percent slopes—1 percent
 Newcone very gravelly sandy loam, 30 to 75 percent slopes—1 percent

Component Description

Pinew and similar soils

Landform: Backslopes of mountains
 Slope: 30 to 75 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Forest canopy—singleleaf pinyon
 Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush
 Site index: Singleleaf pinyon—75 at an age base of 0 years

Typical profile:

Surface rock fragments: About 25 percent gravel, 9 percent stones, 5 percent cobbles
 Layer 1—0 to 3 inches; very gravelly sandy loam
 Layer 2—3 to 8 inches; very gravelly sandy clay loam
 Layer 3—8 to 15 inches; very gravelly clay loam
 Layer 4—15 to 25 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F026XY044NV

Component Description

Carshal and similar soils

Landform: Backslopes of mountains
 Slope: 30 to 75 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Indian ricegrass, Thurber's needlegrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, other shrubs, other trees, other perennial grasses

Typical profile:

Surface rock fragments: About 2 percent stones, 5 percent cobbles, 25 percent gravel
 Layer 1—0 to 2 inches; very gravelly sandy loam
 Layer 2—2 to 5 inches; gravelly loam
 Layer 3—5 to 14 inches; bedrock
 Layer 4—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (paralithic): 4 to 10 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 0.5 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: R022AY041NV—Eroded slope 14-20 P.Z.

Component Description**Loope and similar soils**

Landform: Backslopes of mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent gravel, 2 percent stones, 5 percent cobbles

Layer 1—0 to 1 inch; very gravelly sandy loam

Layer 2—1 to 14 inches; extremely gravelly sandy clay loam

Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Component Description**Celeridge and similar soils**

Landform: Shoulders of mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Typical profile:

Surface rock fragments: About 20 percent boulders, 15 percent gravel, 10 percent cobbles, 10 percent stones

Layer 1—0 to 3 inches; extremely bouldery sandy loam

Layer 2—3 to 8 inches; extremely gravelly sandy loam

Layer 3—8 to 19 inches; extremely gravelly sandy clay loam

Layer 4—19 to 29 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY024NV—Mahogany Savanna

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Dogbed and similar soils**

Composition: 0 to 5 percent

Slope: 30 to 75 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush

Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Heenlake and similar soils

Composition: 0 to 2 percent

Slope: 30 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Joecut and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Forest canopy—white fir Forest
 understory—needlegrass, bluegrass, other perennial
 forbs, Ceanothus, snowberry
 Ecological site: F022AY108NV

Joecut and similar soils

Composition: 0 to 2 percent
 Slope: 30 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Forest canopy—Jeffrey pine Forest
 understory—other perennial forbs, mountain big
 sagebrush, snowberry, currant
 Ecological site: F022AY116NV

Rock outcrop

Composition: 0 to 2 percent
 Landform: Mountains
 Ecological site: None

Chenhigh and similar soils

Composition: 0 to 1 percent
 Slope: 4 to 30 percent
 Landform: Shoulders of mountains
 Typical vegetation: Needlegrass, Thurber's needlegrass,
 mountain brome, bluegrass, other perennial forbs,
 low sagebrush, antelope bitterbrush
 Ecological site: R022AY028NV—Claypan 16+ P.Z.

Newcone and similar soils

Composition: 0 to 1 percent
 Slope: 30 to 75 percent
 Landform: Backslopes of mountains
 Typical vegetation: Forest canopy—Jeffrey pine Forest
 understory—other perennial forbs, greenleaf
 manzanita, antelope bitterbrush, currant, snowberry
 Ecological site: F022AY129NV

Management

For information about managing this map unit, see the
 following sections and associated tables in this
 publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

401—Pinew-Rock outcrop association

Map Unit Setting

MLRA: 26

Landscape: Mountains
 Elevation: 5,800 to 8,000
 Precipitation: 16 to 24 inches
 Air temperature: 39 to 45 degrees Fahrenheit
 Frost-free period: 40 to 70 days

Composition

Pinew very gravelly sandy loam, 15 to 50 percent
 slopes—75 percent
 Rock outcrop—10 percent
 Dogbed very gravelly sandy loam, 15 to 50 percent
 slopes—3 percent
 Loope very gravelly sandy loam, 15 to 50 percent
 slopes—3 percent
 Aspocket gravelly sandy loam, 8 to 30 percent slopes—2
 percent
 Carshal very gravelly sandy loam, 30 to 75 percent
 slopes—2 percent
 Celeridge extremely bouldery sandy loam, 8 to 30
 percent slopes—2 percent
 Joecut very gravelly peaty loam, 15 to 50 percent
 slopes—1 percent
 Newcone very gravelly sandy loam, 30 to 75 percent
 slopes—1 percent
 Aquic Cumulic Haploxerolls very gravelly sandy loam, 4
 to 15 percent slopes—1 percent

Component Description

Pinew and similar soils

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff
 breccia over residuum derived from andesite or tuff
 breccia
 Typical vegetation: Forest canopy—singleleaf pinyon
 Forest understory—needlegrass, muttongrass,
 mountain big sagebrush, currant, snowberry,
 antelope bitterbrush
 Site index: Singleleaf pinyon—75 at an age base of 0
 years

Typical profile:

Surface rock fragments: About 25 percent gravel, 9
 percent stones, 5 percent cobbles
 Layer 1—0 to 3 inches; very gravelly sandy loam
 Layer 2—3 to 8 inches; very gravelly sandy clay loam
 Layer 3—8 to 15 inches; very gravelly clay loam
 Layer 4—15 to 25 inches; bedrock

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F026XY044NV

Component Description**Rock outcrop**

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Dogbed and similar soils**

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush

Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Loope and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Aspocket and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Carshal and similar soils

Composition: 0 to 2 percent

Slope: 30 to 75 percent

Landform: Backslopes of mountains

Typical vegetation: Indian ricegrass, Thurber's needlegrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, other shrubs, other trees, other perennial grasses

Ecological site: R022AY041NV—Eroded slope 14-20 P.Z.

Celeridge and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Aquic Cumulic Haploxerolls and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed, mesic Aquic Cumulic Haploxerolls

Slope: 4 to 15 percent

Landform: Stream terraces

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Joecut and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—white fir Forest understory—needlegrass, bluegrass, other perennial forbs, Ceanothus, snowberry

Ecological site: F022AY108NV

Newcone and similar soils

Composition: 0 to 1 percent

Slope: 30 to 75 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, greenleaf manzanita, antelope bitterbrush, currant, snowberry

Ecological site: F022AY129NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

410—Wolfcut very stony loam, 8 to 30 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountain valleys or canyons

Elevation: 6,500 to 7,500

Precipitation: 20 to 30 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Wolfcut very stony loam, 8 to 30 percent slopes—85 percent

Wolfcut very stony loam, moist, 8 to 30 percent slopes—5 percent

Typic Argixerolls very stony sandy loam, 4 to 30 percent slopes—4 percent

Burnlake extremely gravelly sandy loam, 8 to 30 percent slopes—2 percent

Hopeval very fine sandy loam, 0 to 8 percent slopes—1 percent

Hopeval mucky loam, wet, 0 to 8 percent slopes—1 percent

Rock outcrop—1 percent

Typic Cryaquents extremely gravelly coarse sand, 0 to 2 percent slopes—1 percent

Component Description

Wolfcut and similar soils

Landform: Fan remnants

Slope: 8 to 30 percent

Parent material: Colluvium and slope alluvium from mixed rocks

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Site index: Jeffrey pine—70

Typical profile:

Surface rock fragments: About 20 percent gravel, 9 percent stones, 15 percent cobbles

Layer 1—0 to 1 inch; slightly decomposed plant material

Layer 2—1 to 4 inches; very stony loam

Layer 3—4 to 11 inches; extremely stony sandy clay loam

Layer 4—11 to 60 inches; extremely gravelly sandy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: Rare

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY116NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Wolfcut and similar soils

Composition: 0 to 5 percent

Slope: 8 to 30 percent

Landform: Fan remnants

Typical vegetation: Forest canopy—white fir Forest understory—needlegrass, bluegrass, other perennial forbs, Ceanothus, snowberry

Ecological site: F022AY108NV

Typic Argixerolls and similar soils

Composition: 0 to 4 percent

Classification: Loamy-skeletal, mixed, superactive, frigid Typic Argixerolls

Slope: 4 to 30 percent

Landform: Toeslopes of mountains

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Burnlake and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—Jeffrey pine Forest
understory—other perennial forbs, mountain big
sagebrush, snowberry, currant
Ecological site: F022AY116NV

Hopeval and similar soils

Composition: 0 to 1 percent
Slope: 0 to 8 percent
Landform: Swales
Typical vegetation: Nebraska sedge, tufted hairgrass,
Baltic rush, other perennial forbs, other perennial
grasses
Ecological site: R022AY016NV—Wet meadow

Rock outcrop

Composition: 0 to 1 percent
Landform: Mountains
Ecological site: None

Typic Cryaquents and similar soils

Composition: 0 to 1 percent
Classification: Sandy-skeletal, mixed Typic Cryaquents
Slope: 0 to 2 percent
Landform: Flood plains
Typical vegetation: Creeping wildrye, Kentucky
bluegrass, other perennial grasses, other perennial
forbs, willow
Ecological site: R022AY019NV—Gravel bar

Management

For information about managing this map unit, see the
following sections and associated tables in this
publication:

"Range" section
"Forest land" section
"Engineering" and "Soil Properties" sections

420—Buggin-Rock outcrop complex, 30 to 75 percent slopes

Map Unit Setting

MLRA: 22A
Landscape: Mountains
Elevation: 8,000 to 11,000
Precipitation: 30 to 45 inches
Air temperature: 36 to 39 degrees Fahrenheit
Frost-free period: 30 to 60 days

Composition

Buggin extremely bouldery loamy coarse sand, 30 to 75
percent slopes—75 percent
Rock outcrop—15 percent

Shalgran very bouldery coarse sand, dry, 30 to 75
percent slopes—5 percent
Jobsis very gravelly loamy coarse sand, 30 to 75 percent
slopes—2 percent
Buggin extremely bouldery loamy coarse sand, moist, 30
to 50 percent slopes—2 percent
Lostcannon very gravelly coarse sandy loam, 4 to 30
percent slopes—1 percent

Component Description

Buggin and similar soils

Landform: Backslopes of mountains
Slope: 30 to 75 percent
Parent material: Colluvium derived from granodiorite
over residuum derived from granodiorite
Typical vegetation: Bluegrass, needlegrass, other
perennial forbs, mountain big sagebrush, curleaf
mountainmahogany

Typical profile:

Surface rock fragments: About 10 percent gravel, 9
percent stones, 5 percent cobbles, 20 percent fine
gravel, 15 percent boulders
Layer 1—0 to 2 inches; extremely bouldery loamy
coarse sand
Layer 2—2 to 7 inches; very gravelly loamy coarse sand
Layer 3—7 to 10 inches; extremely gravelly coarse
sandy loam
Layer 4—10 to 16 inches; bedrock
Layer 5—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the
"Physical Properties of Soils" table for more
information.

Component Properties and Qualities

Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 10 to 14
inches
Saturated hydraulic conductivity class (root zone): High,
(Permeability class: Rapid)
Available water capacity: About 0.6 inch
Present flooding: None
Present ponding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 8s
Ecological site: R022AY024NV—Mahogany Savanna

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Shalgran and similar soils**

Composition: 0 to 5 percent

Slope: 30 to 75 percent, south aspect

Landform: South facing mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—mountain big sagebrush, currant, snowberry

Ecological site: F022AY130NV

Buggin and similar soils

Composition: 0 to 2 percent

Slope: 30 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, curleaf mountainmahogany, snowberry

Ecological site: R022AY025NV—Mahogany thicket

Jobsis and similar soils

Composition: 0 to 2 percent

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs

Ecological site: F022AY126NV

Lostcannon and similar soils

Composition: 0 to 1 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

430—Newcone-Rock outcrop complex, 30 to 75 percent slopes***Map Unit Setting***

MLRA: 22A

Landscape: Mountains

Elevation: 6,000 to 8,000

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Newcone very gravelly sandy loam, 30 to 75 percent slopes—75 percent

Rock outcrop—10 percent

Joecut very gravelly sandy loam, dry, 15 to 50 percent slopes—5 percent

Heenlake very stony sandy loam, 15 to 50 percent slopes—3 percent

Celeridge extremely bouldery sandy loam, 15 to 50 percent slopes—3 percent

Dogbed very gravelly sandy loam, 30 to 75 percent slopes—2 percent

Loope very gravelly sandy loam, 15 to 50 percent slopes—2 percent

Component Description**Newcone and similar soils**

Landform: Backslopes of mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from hydrothermally altered volcanic rock over residuum derived from hydrothermally altered volcanic rock

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, greenleaf manzanita, antelope bitterbrush, currant, snowberry

Site index: Jeffrey pine—44

Typical profile:

Surface rock fragments: About 45 percent gravel, 1 percent stones, 5 percent cobbles

Layer 1—0 to 1 inch; very gravelly sandy loam

Layer 2—1 to 6 inches; very gravelly loam

Layer 3—6 to 20 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (paralithic): 3 to 10 inches

Saturated hydraulic conductivity class (root zone): High,
 (Permeability class: Moderately rapid)
 Available water capacity: About 0.5 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: F022AY129NV

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Nonirrigated land capability: Not determined
 Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Joecut and similar soils

Composition: 0 to 5 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
 Ecological site: F022AY116NV

Celeridge and similar soils

Composition: 0 to 3 percent
 Slope: 15 to 50 percent
 Landform: Shoulders of mountains
 Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany
 Ecological site: R022AY024NV—Mahogany Savanna

Heenlake and similar soils

Composition: 0 to 3 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush
 Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Dogbed and similar soils

Composition: 0 to 2 percent
 Slope: 30 to 75 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush
 Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Loope and similar soils

Composition: 0 to 2 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush
 Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

440—Dogbed-Celeridge-Carshal association

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 6,000 to 8,000
 Precipitation: 16 to 24 inches
 Air temperature: 39 to 45 degrees Fahrenheit
 Frost-free period: 40 to 70 days

Composition

Dogbed very gravelly sandy loam, 30 to 75 percent slopes—35 percent
 Celeridge extremely bouldery sandy loam, 15 to 50 percent slopes—25 percent
 Carshal very gravelly sandy loam, 30 to 75 percent slopes—20 percent
 Joecut very gravelly peaty loam, 15 to 50 percent slopes—10 percent
 Heenlake very stony sandy loam, 30 to 50 percent slopes—3 percent
 Newcone very gravelly sandy loam, 30 to 75 percent slopes—3 percent

Loope very gravelly sandy loam, 15 to 50 percent slopes—2 percent
Rock outcrop—2 percent

Component Description

Dogbed and similar soils

Landform: Backslopes of mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from andesite and tuff breccia

Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush

Typical profile:

Surface rock fragments: About 50 percent gravel, 1 percent stones, 5 percent cobbles

Layer 1—0 to 14 inches; very gravelly sandy loam

Layer 2—14 to 50 inches; very gravelly sandy clay loam

Layer 3—50 to 60 inches; very gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Component Description

Celeridge and similar soils

Landform: Shoulders of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Typical profile:

Surface rock fragments: About 20 percent boulders, 15 percent gravel, 10 percent cobbles, 10 percent stones

Layer 1—0 to 3 inches; extremely bouldery sandy loam

Layer 2—3 to 8 inches; extremely gravelly sandy loam

Layer 3—8 to 19 inches; extremely gravelly sandy clay loam

Layer 4—19 to 29 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY024NV—Mahogany Savanna

Component Description

Carshal and similar soils

Landform: Shoulders of mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Indian ricegrass, Thurber's needlegrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, other shrubs, other trees, other perennial grasses

Typical profile:

Surface rock fragments: About 30 percent gravel, 9 percent stones, 5 percent cobbles

Layer 1—0 to 2 inches; very gravelly sandy loam

Layer 2—2 to 5 inches; gravelly loam

Layer 3—5 to 14 inches; bedrock

Layer 4—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (paralithic): 4 to 10 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 0.5 inch

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: R022AY041NV—Eroded slope 14-20 P.Z.

Component Description**Joecut and similar soils**

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Forest canopy—white fir Forest understory—needlegrass, bluegrass, other perennial forbs, Ceanothus, snowberry

Site index: White fir—35 at an age base of 50 years

Typical profile:

Surface rock fragments: About 15 percent gravel, 15 percent cobbles, 9 percent stones, 5 percent boulders

Layer 1—0 to 1 inch; slightly decomposed plant material

Layer 2—1 to 2 inches; very gravelly peaty loam

Layer 3—2 to 14 inches; very gravelly loam

Layer 4—14 to 40 inches; very gravelly clay loam

Layer 5—40 to 60 inches; very cobbly clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 11 inches

Present flooding: None

Present ponding: None

Water table: Present

Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY108NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Heenlake and similar soils**

Composition: 0 to 3 percent

Slope: 30 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Newcone and similar soils

Composition: 0 to 3 percent

Slope: 30 to 75 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, greenleaf manzanita, antelope bitterbrush, currant, snowberry

Ecological site: F022AY129NV

Loope and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Rock outcrop

Composition: 0 to 2 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

450—Carshal-Loope-Rock outcrop complex, 15 to 75 percent slopes

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 6,000 to 8,000
 Precipitation: 16 to 24 inches
 Air temperature: 39 to 45 degrees Fahrenheit
 Frost-free period: 40 to 70 days

Composition

Carshal very gravelly sandy loam, 30 to 75 percent slopes—55 percent
 Loope very gravelly sandy loam, 15 to 50 percent slopes—20 percent
 Rock outcrop—10 percent
 Celeridge extremely bouldery sandy loam, 15 to 50 percent slopes—5 percent
 Joecut very gravelly peaty loam, 15 to 50 percent slopes—4 percent
 Joecut very gravelly sandy loam, dry, 15 to 50 percent slopes—3 percent
 Heenlake very stony sandy loam, 15 to 50 percent slopes—2 percent
 Aspocket gravelly sandy loam, 8 to 30 percent slopes—1 percent

Component Description

Carshal and similar soils

Landform: Backslopes of mountains
 Slope: 30 to 75 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Indian ricegrass, Thurber's needlegrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, other shrubs, other trees, other perennial grasses

Typical profile:

Surface rock fragments: About 25 percent gravel, 5 percent cobbles, 2 percent stones
 Layer 1—0 to 2 inches; very gravelly sandy loam
 Layer 2—2 to 5 inches; gravelly loam
 Layer 3—5 to 14 inches; bedrock
 Layer 4—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (paralithic): 4 to 10 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 0.5 inch

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: R022AY041NV—Eroded slope 14-20 P.Z.

Component Description

Loope and similar soils

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent gravel, 5 percent cobbles, 2 percent stones
 Layer 1—0 to 1 inch; very gravelly sandy loam
 Layer 2—1 to 14 inches; extremely gravelly sandy clay loam
 Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Component Description**Rock outcrop**

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Celeridge and similar soils**

Composition: 0 to 5 percent

Slope: 15 to 50 percent

Landform: Shoulders of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Joecut and similar soils

Composition: 0 to 4 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—white fir Forest understory—needlegrass, bluegrass, other perennial forbs, Ceanothus, snowberry

Ecological site: F022AY108NV

Joecut and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Heenlake and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Aspocket and similar soils

Composition: 0 to 1 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

460—Toejom-Pimogran-Rock outcrop association***Map Unit Setting***

MLRA: 22A

Landscape: Mountains

Elevation: 6,000 to 8,000

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 50 to 70 days

Composition

Toejom very gravelly coarse sand, 15 to 50 percent slopes—45 percent

Pimogran very gravelly loamy coarse sand, 15 to 50 percent slopes—30 percent

Rock outcrop—10 percent

Lockgate very gravelly loamy coarse sand, 15 to 50 percent slopes—5 percent

Granhogany very gravelly loamy coarse sand, 8 to 30 percent slopes—4 percent

Elaero very gravelly loamy coarse sand, 15 to 50 percent slopes—3 percent

Granidry very gravelly coarse sandy loam, 30 to 50 percent slopes—2 percent

Toiyabe very bouldery loamy coarse sand, 15 to 50 percent slopes—1 percent

Component Description**Toejom and similar soils**

Landform: South facing mountains

Slope: 15 to 50 percent, south aspect

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—mountain big sagebrush, antelope bitterbrush

Site index: Singleleaf pinyon—75 at an age base of 0 years

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 5 percent subrounded cobbles, 5 percent subrounded stones

Layer 1—0 to 9 inches; very gravelly coarse sand

Layer 2—9 to 14 inches; very gravelly coarse sand

Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.6 inch

Present flooding: None

Present ponding: None

Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: F026XY104NV

Component Description

Pimogran and similar soils

Landform: North facing mountains

Slope: 15 to 50 percent, north aspect

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush

Site index: Singleleaf pinyon—75 at an age base of 0 years

Typical profile:

Surface rock fragments: About 10 percent subrounded boulders, 10 percent subrounded stones, 10 percent subrounded cobbles, 35 percent subrounded gravel

Layer 1—0 to 10 inches; very gravelly loamy coarse sand

Layer 2—10 to 18 inches; very gravelly coarse sand

Layer 3—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.7 inch

Present flooding: None

Present ponding: None

Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: F026XY044NV

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Lockgate and similar soils

Composition: 0 to 5 percent

Slope: 15 to 50 percent, north aspect

Landform: North facing mountains

Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush

Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Granhogany and similar soils

Composition: 0 to 4 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Elairo and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Needlegrass, Indian ricegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush
 Ecological site: R022AY043NV—South slope 14-16 P.Z.

Granidry and similar soils

Composition: 0 to 2 percent
 Slope: 30 to 50 percent, south aspect
 Landform: South facing mountains
 Typical vegetation: Desert needlegrass, lupine, other perennial forbs, mountain big sagebrush, antelope bitterbrush
 Ecological site: R022AY048NV—Granitic south slope 14-16 P.Z.

Toiyabe and similar soils

Composition: 0 to 1 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
 Ecological site: F022AY116NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

461—Toejom-Pimogran-Rock outcrop association, 50 to 75 percent slopes

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 6,000 to 8,000
 Precipitation: 16 to 24 inches
 Air temperature: 39 to 45 degrees Fahrenheit
 Frost-free period: 50 to 70 days

Composition

Toejom very gravelly coarse sand, dry, 50 to 75 percent slopes—40 percent
 Pimogran very gravelly loamy coarse sand, 50 to 75 percent slopes—35 percent
 Rock outcrop—10 percent

Lockgate very gravelly loamy coarse sand, 30 to 75 percent slopes—5 percent
 Granhogany very gravelly loamy coarse sand, 15 to 50 percent slopes—4 percent
 Elaero very gravelly loamy coarse sand, 15 to 50 percent slopes—3 percent
 Granidry very gravelly coarse sandy loam, 30 to 75 percent slopes—2 percent
 Toiyabe very bouldery loamy coarse sand, 30 to 75 percent slopes—1 percent

Component Description

Toejom and similar soils

Landform: South facing mountains
 Slope: 50 to 75 percent, south aspect
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Forest canopy—singleleaf pinyon
 Forest understory—mountain big sagebrush, antelope bitterbrush, currant
 Site index: Singleleaf pinyon—25 at an age base of 0 years

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 15 percent subrounded cobbles, 15 percent subrounded stones
 Layer 1—0 to 9 inches; very gravelly coarse sand
 Layer 2—9 to 14 inches; very gravelly coarse sand
 Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 0.6 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: F026XY061NV

Component Description**Pimogran and similar soils**

Landform: North facing mountains

Slope: 50 to 75 percent, north aspect

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush

Site index: Singleleaf pinyon—75 at an age base of 0 years

Typical profile:

Surface rock fragments: About 35 percent subrounded gravel, 10 percent subrounded cobbles, 10 percent subrounded stones, 10 percent subrounded boulders

Layer 1—0 to 10 inches; very gravelly loamy coarse sand

Layer 2—10 to 18 inches; very gravelly coarse sand

Layer 3—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.7 inch

Present flooding: None

Present ponding: None

Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: F026XY044NV

Component Description**Rock outcrop**

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Lockgate and similar soils**

Composition: 0 to 5 percent

Slope: 30 to 75 percent, north aspect

Landform: North facing mountains

Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush

Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Granhogany and similar soils

Composition: 0 to 4 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Elaero and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Needlegrass, Indian ricegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY043NV—South slope 14-16 P.Z.

Granidry and similar soils

Composition: 0 to 2 percent

Slope: 30 to 75 percent, south aspect

Landform: South facing mountains

Typical vegetation: Desert needlegrass, lupine, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY048NV—Granitic south slope 14-16 P.Z.

Toiyabe and similar soils

Composition: 0 to 1 percent

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

462—Toejom-Glenbrook-Pimogran association

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 5,800 to 6,800
 Precipitation: 12 to 18 inches
 Air temperature: 43 to 46 degrees Fahrenheit
 Frost-free period: 70 to 80 days

Composition

Toejom very gravelly coarse sand, 15 to 50 percent slopes—40 percent
 Glenbrook gravelly loamy coarse sand, 15 to 50 percent slopes—30 percent
 Pimogran very gravelly loamy coarse sand, 15 to 50 percent slopes—20 percent
 Graufels gravelly loamy coarse sand, 15 to 50 percent slopes—4 percent
 Rock outcrop—3 percent
 Mottsville gravelly loamy coarse sand, 4 to 15 percent slopes—3 percent

Component Description

Toejom and similar soils

Landform: South facing mountains
 Slope: 15 to 50 percent, south aspect
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Forest canopy—singleleaf pinyon
 Forest understory—mountain big sagebrush, antelope bitterbrush
 Site index: Singleleaf pinyon—75 at an age base of 0 years

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 5 percent subrounded cobbles, 5 percent subrounded stones
 Layer 1—0 to 9 inches; very gravelly coarse sand
 Layer 2—9 to 14 inches; very gravelly coarse sand
 Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 0.6 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: F026XY104NV

Component Description

Glenbrook and similar soils

Landform: Mountains
 Slope: 15 to 50 percent
 Parent material: Residuum derived from granodiorite
 Typical vegetation: Desert needlegrass, Thurber needlegrass, Wyoming big sagebrush, green ephedra, other perennial forbs, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel
 Layer 1—0 to 5 inches; gravelly loamy coarse sand
 Layer 2—5 to 14 inches; gravelly loamy coarse sand
 Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 0.9 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7e
 Ecological site: R026XY018NV—Granitic south slope 10-12 P.Z.

Component Description

Pimogran and similar soils

Landform: North facing mountains

Slope: 15 to 50 percent, north aspect

Parent material: Colluvium derived from granodiorite
over residuum derived from granodiorite

Typical vegetation: Forest canopy—singleleaf pinyon
Forest understory—needlegrass, muttongrass,
mountain big sagebrush, currant, snowberry,
antelope bitterbrush

Site index: Singleleaf pinyon—75 at an age base of 0
years

Typical profile:

Surface rock fragments: About 10 percent subrounded
boulders, 10 percent subrounded stones, 10 percent
subrounded cobbles, 35 percent subrounded gravel

Layer 1—0 to 10 inches; very gravelly loamy coarse
sand

Layer 2—10 to 18 inches; very gravelly coarse sand

Layer 3—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the
"Physical Properties of Soils" table for more
information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 14 to 20
inches

Saturated hydraulic conductivity class (root zone): High,
(Permeability class: Rapid)

Available water capacity: About 0.7 inch

Present flooding: None

Present ponding: None

Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F026XY044NV

Typical soil descriptions including ranges in
characteristics are in the "Classification of the Soils"
section.

Contrasting Inclusions

Graufels and similar soils

Composition: 0 to 4 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Antelope bitterbrush, mountain big
sagebrush, other perennial forbs, Thurber
needlegrass, desert needlegrass, Indian ricegrass

Ecological site: R026XY015NV—Shallow loam 10-12
P.Z.

Mottsville and similar soils

Composition: 0 to 3 percent

Slope: 4 to 15 percent

Landform: Alluvial fans

Typical vegetation: Antelope bitterbrush,
needleandthread, mountain big sagebrush, Indian
ricegrass

Ecological site: R026XY008NV—Granitic fan 10-12 P.Z.

Rock outcrop

Composition: 0 to 3 percent

Landform: Peaks

Ecological site: None

Management

For information about managing this map unit, see the
following sections and associated tables in this
publication:

"Range" section

"Crops and Pasture" section

"Engineering" and "Soil Properties" sections

470—Sumeadow-Lostridge association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 9,500

Precipitation: 25 to 35 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Sumeadow very gravelly peaty sandy loam, 15 to 50
percent slopes—55 percent

Lostridge very gravelly coarse sandy loam, dry, 15 to 50
percent slopes—30 percent

Aspocket gravelly sandy loam, 8 to 30 percent slopes—5
percent

Hawkinspeak very gravelly sandy loam, warm, 15 to 50
percent slopes—3 percent

Fishsnooze very gravelly sandy loam, cool, 15 to 50
percent slopes—2 percent

Aspocket gravelly sandy loam, moist, 15 to 50 percent
slopes—2 percent

Rock outcrop—1 percent

Cumulic Cryaquolls very fine sandy loam, 2 to 8 percent
slopes—1 percent

Typic Cryaquolls very gravelly sandy loam, 4 to 15
percent slopes—1 percent

Component Description**Sumeadow and similar soils**

Landform: Mountains

Slope: 15 to 50 percent

Parent material: Colluvium from andesite or tuff breccia

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry

Site index: Lodgepole pine—35

Typical profile:

Surface rock fragments: About 25 percent subrounded gravel, 5 percent subrounded cobbles, 5 percent subrounded stones

Layer 1—0 to 0.4 inch; slightly decomposed plant material

Layer 2—0.4 to 2 inches; very gravelly peaty sandy loam

Layer 3—2 to 13 inches; extremely gravelly sandy loam

Layer 4—13 to 65 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY127NV

Component Description**Lostridge and similar soils**

Landform: Mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry

Site index: Lodgepole pine—20

Typical profile:

Surface rock fragments: About 35 percent gravel

Layer 1—0 to 3 inches; very gravelly coarse sandy loam

Layer 2—3 to 11 inches; very gravelly coarse sandy loam

Layer 3—11 to 23 inches; very gravelly coarse sandy loam

Layer 4—23 to 29 inches; very gravelly coarse sandy loam

Layer 5—29 to 39 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY127NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Aspocket and similar soils**

Composition: 0 to 5 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Hawkinspeak and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY021NV—South slope 30+ P.Z.

Aspocket and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Needlegrass, mountain brome, other perennial forbs, quaking aspen, snowberry
 Ecological site: R022AY046NV—Aspen thicket

Fishsnooze and similar soils

Composition: 0 to 2 percent
 Slope: 15 to 50 percent, northeast aspect
 Landform: Northeast facing mountains
 Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs
 Ecological site: F022AY126NV

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent
 Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls
 Slope: 2 to 8 percent
 Landform: Dissected plains
 Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs
 Ecological site: R022AY017NV—Semi-wet meadow

Rock outcrop

Composition: 0 to 1 percent
 Landform: Mountains
 Ecological site: None

Typic Cryaquolls and similar soils

Composition: 0 to 1 percent
 Classification: Sandy-skeletal, mixed Typic Cryaquolls
 Slope: 4 to 15 percent
 Landform: Flood plains
 Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow
 Ecological site: R022AY034NV—Moist willow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

471—Sumeadow association

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 8,000 to 10,000
 Precipitation: 25 to 35 inches

Air temperature: 36 to 39 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Sumeadow very gravelly peaty sandy loam, 15 to 50 percent slopes—55 percent
 Sumeadow very gravelly peaty sandy loam, cool, 4 to 15 percent slopes—30 percent
 Dab extremely gravelly sandy loam, moist, 15 to 50 percent slopes—4 percent
 Coldtree very gravelly loamy coarse sand, 15 to 50 percent slopes—4 percent
 Thiefridge very stony fine sandy loam, moist, 15 to 50 percent slopes—3 percent
 Aspocket gravelly sandy loam, 4 to 30 percent slopes—3 percent
 Rock outcrop—1 percent

Component Description

Sumeadow and similar soils

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium from andesite or tuff breccia
 Typical vegetation: Forest canopy—lodgepole pine Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry
 Site index: Lodgepole pine—35

Typical profile:

Surface rock fragments: About 25 percent subrounded gravel, 5 percent subrounded cobbles, 5 percent subrounded stones
 Layer 1—0 to 0.4 inch; slightly decomposed plant material
 Layer 2—0.4 to 2 inches; very gravelly peaty sandy loam
 Layer 3—2 to 13 inches; extremely gravelly sandy loam
 Layer 4—13 to 65 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 6 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY127NV

Component Description**Sumeadow and similar soils**

Landform: Shoulders of mountains

Slope: 4 to 15 percent

Parent material: Colluvium from andesite or tuff breccia

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain

big sagebrush, currant, snowberry

Site index: Lodgepole pine—40

Typical profile:

Surface rock fragments: About 25 percent subrounded gravel, 5 percent subrounded cobbles, 5 percent subrounded stones

Layer 1—0 to 0.4 inch; slightly decomposed plant material

Layer 2—0.4 to 2 inches; very gravelly peaty sandy loam

Layer 3—2 to 13 inches; extremely gravelly sandy loam

Layer 4—13 to 65 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY127NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Coldtree and similar soils**

Composition: 0 to 4 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs

Ecological site: F022AY126NV

Dab and similar soils

Composition: 0 to 4 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, spike fescue, other perennial forbs, mountain big sagebrush

Ecological site: R022AY045NV—Gravelly loamy slope 20-30 P.Z.

Aspocket and similar soils

Composition: 0 to 3 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender

wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Thiefridge and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Shoulders of mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, curleaf mountainmahogany, snowberry

Ecological site: R022AY025NV—Mahogany thicket

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

480—Aspetill association***Map Unit Setting***

MLRA: 22A

Landscape: Mountain valleys or canyons

Elevation: 7,000 to 8,000

Precipitation: 20 to 30 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Aspetill very gravelly sandy loam, 4 to 30 percent slopes—60 percent

Aspetill very gravelly sandy loam, moist, 4 to 30 percent slopes—25 percent

Murain extremely stony coarse sandy loam, 4 to 30 percent slopes—6 percent

Aquic Argicryolls very bouldery sandy loam, 4 to 30 percent slopes—4 percent

Cloudburst extremely bouldery coarse sandy loam, 4 to 30 percent slopes—3 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent

Typic Cryaquolls very gravelly sandy loam, 0 to 8 percent slopes—1 percent

Component Description

Aspetill and similar soils

Landform: Moraines

Slope: 4 to 30 percent

Parent material: Till derived from mixed rock sources

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Site index: Quaking aspen—40 at an age base of 50 years

Typical profile:

Surface rock fragments: About 20 percent subrounded gravel, 5 percent subrounded boulders, 5 percent subrounded stones

Layer 1—0 to 5 inches; very gravelly sandy loam

Layer 2—5 to 26 inches; extremely cobbly sandy clay loam

Layer 3—26 to 60 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY103NV

Component Description

Aspetill and similar soils

Landform: Moraines

Slope: 4 to 30 percent

Parent material: Till derived from mixed rock sources

Typical vegetation: Needlegrass, mountain brome, other perennial forbs, quaking aspen, snowberry

Typical profile:

Surface rock fragments: About 20 percent subrounded gravel, 5 percent subrounded stones, 5 percent subrounded boulders

Layer 1—0 to 5 inches; very gravelly sandy loam

Layer 2—5 to 26 inches; extremely cobbly sandy clay loam

Layer 3—26 to 60 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY046NV—Aspen thicket

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Murain and similar soils

Composition: 0 to 6 percent

Slope: 4 to 30 percent

Landform: Moraines

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Aquic Argicryolls and similar soils

Composition: 0 to 4 percent

Classification: Loamy-skeletal, mixed, superactive Aquic Argicryolls

Slope: 4 to 30 percent

Landform: Foothills of moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Cloudburst and similar soils

Composition: 0 to 3 percent

Slope: 4 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls

Slope: 0 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Typic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 0 to 8 percent

Landform: Flood plains

Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

481—Aspetill association, very stony**Map Unit Setting**

MLRA: 22A

Landscape: Mountain valleys or canyons

Elevation: 7,000 to 9,000

Precipitation: 30 to 45 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Aspetill very gravelly sandy loam, moist, 4 to 30 percent slopes—50 percent

Aspetill very stony coarse sandy loam, 4 to 30 percent slopes—35 percent

Pachic Argicryolls very stony sandy loam, 15 to 50 percent slopes—3 percent

Aquic Argicryolls very bouldery sandy loam, 4 to 30 percent slopes—3 percent

Cumulic Cryaquolls mucky loam, 4 to 30 percent slopes—2 percent

Rock outcrop—2 percent

Stumpatill very gravelly coarse sandy loam, dry, 8 to 30 percent slopes—2 percent

Dunderberg very gravelly ashy sandy loam, 8 to 30 percent slopes—2 percent

Cumulic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—1 percent

Component Description**Aspetill and similar soils**

Landform: Moraines

Slope: 4 to 30 percent

Parent material: Till derived from mixed rock sources

Typical vegetation: Needlegrass, mountain brome, other perennial forbs, quaking aspen, snowberry

Typical profile:

Surface rock fragments: About 20 percent subrounded gravel, 5 percent subrounded stones, 5 percent subrounded boulders

Layer 1—0 to 5 inches; very gravelly sandy loam

Layer 2—5 to 26 inches; extremely cobbly sandy clay loam

Layer 3—26 to 60 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY046NV—Aspen thicket

Component Description

Aspetill and similar soils

Landform: Moraines

Slope: 4 to 30 percent

Parent material: Till derived from mixed rock sources

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Site index: Quaking aspen—40 at an age base of 50 years

Typical profile:

Surface rock fragments: About 20 percent subrounded gravel, 5 percent subrounded boulders, 5 percent subrounded stones

Layer 1—0 to 5 inches; very stony coarse sandy loam

Layer 2—5 to 26 inches; extremely cobbly sandy clay loam

Layer 3—26 to 60 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY103NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Aquic Argicryolls and similar soils

Composition: 0 to 3 percent

Classification: Loamy-skeletal, mixed, superactive Aquic Argicryolls

Slope: 4 to 30 percent

Landform: Footslopes of moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada

bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Pachic Argicryolls and similar soils

Composition: 0 to 3 percent

Classification: Loamy-skeletal, mixed Pachic Argicryolls

Slope: 15 to 50 percent

Landform: Backslopes of moraines

Typical vegetation: Other perennial grasses, other

perennial forbs, mountain big sagebrush, bitter

cherry, common chokecherry, snowberry, western

needlegrass, mountain brome, muttongrass

Ecological site: R022AY020NV—Prunus pocket

Cumulic Cryaquolls and similar soils

Composition: 0 to 2 percent

Classification: Coarse-loamy, mixed, superactive

Cumulic Cryaquolls

Slope: 4 to 30 percent

Landform: Dissected plains

Typical vegetation: Nebraska sedge, tufted hairgrass,

Baltic rush, other perennial forbs, other perennial

grasses

Ecological site: R022AY016NV—Wet meadow

Dunderberg and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent, north aspect

Landform: North facing moraines

Typical vegetation: Western needlegrass, mountain big

sagebrush, mountain brome

Ecological site: R022AY010NV—Mountain shoulders
30+ P.Z.

Rock outcrop

Composition: 0 to 2 percent

Landform: Mountains

Ecological site: None

Stumpatil and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain

big sagebrush, currant, snowberry

Ecological site: F022AY127NV

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive

Cumulic Cryaquolls

Slope: 2 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

490—Cloudburst-Murain association

Map Unit Setting

MLRA: 22A

Landscape: Mountain valleys or canyons

Elevation: 7,000 to 8,000

Precipitation: 18 to 30 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Cloudburst extremely bouldery coarse sandy loam, 8 to 30 percent slopes—50 percent

Murain extremely stony coarse sandy loam, 8 to 30 percent slopes—35 percent

Aspetill very gravelly sandy loam, 4 to 30 percent slopes—4 percent

Stumpatil very gravelly coarse sandy loam, dry, 8 to 30 percent slopes—3 percent

Joecut very gravelly sandy loam, dry, 15 to 50 percent slopes—3 percent

Aquic Argicryolls very bouldery sandy loam, 4 to 30 percent slopes—2 percent

Rock outcrop—1 percent

Chrisflat very gravelly coarse sandy loam, 4 to 15 percent slopes—1 percent

Aspetill very gravelly sandy loam, moist, 4 to 30 percent slopes—1 percent

Component Description

Cloudburst and similar soils

Landform: Moraines

Slope: 8 to 30 percent

Parent material: Till derived from mixed rock sources

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Site index: Jeffrey pine—70

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 10 percent subrounded boulders, 5 percent subrounded cobbles, 5 percent subrounded stones

Layer 1—0 to 8 inches; extremely bouldery coarse sandy loam

Layer 2—8 to 16 inches; extremely bouldery coarse sandy loam

Layer 3—16 to 29 inches; extremely bouldery sandy clay loam

Layer 4—29 to 60 inches; extremely cobbly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F022AY116NV

Component Description

Murain and similar soils

Landform: Moraines

Slope: 8 to 30 percent

Parent material: Till derived from igneous and metamorphic rock

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 5 percent subrounded boulders, 5 percent subrounded cobbles, 10 percent subrounded stones

Layer 1—0 to 2 inches; extremely stony coarse sandy loam

Layer 2—2 to 7 inches; extremely cobbly coarse sandy loam

Layer 3—7 to 18 inches; extremely cobbly coarse sandy loam

Layer 4—18 to 26 inches; extremely stony sandy clay loam

Layer 5—26 to 41 inches; extremely stony sandy clay loam

Layer 6—41 to 60 inches; extremely cobbly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Saturated hydraulic conductivity class (root zone): High,
(Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Aspetill and similar soils

Composition: 0 to 4 percent

Slope: 4 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Joecut and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Stumpatil and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry

Ecological site: F022AY127NV

Aquic Argicryolls and similar soils

Composition: 0 to 2 percent

Classification: Loamy-skeletal, mixed, superactive Aquic Argicryolls

Slope: 4 to 30 percent

Landform: Footslopes of moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada

bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Aspetill and similar soils

Composition: 0 to 1 percent

Slope: 4 to 30 percent

Landform: Moraines

Typical vegetation: Mountain brome, slender

wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Chrisflat and similar soils

Composition: 0 to 1 percent

Slope: 4 to 15 percent

Landform: Fan remnants

Typical vegetation: Western needlegrass, Thurber's

needlegrass, basin wildrye, muttongrass, other

perennial forbs, mountain big sagebrush, antelope

bitterbrush

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

491—Cloudburst-Murain-Hardtil association

Map Unit Setting

MLRA: 22A

Landscape: Mountain valleys or canyons, mountains

Elevation: 7,000 to 8,000

Precipitation: 20 to 30 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Cloudburst extremely bouldery coarse sandy loam, 15 to 50 percent slopes—45 percent

Murain extremely stony coarse sandy loam, 15 to 50 percent slopes—25 percent

Hardtil gravelly loamy coarse sand, warm, 8 to 30 percent slopes—15 percent

Rock outcrop—5 percent

Aspetill very gravelly sandy loam, 15 to 50 percent slopes—3 percent

Stumpatil very gravelly coarse sandy loam, dry, 15 to 50 percent slopes—3 percent

Heenlake very stony sandy loam, 15 to 50 percent slopes—2 percent

Aquic Argicryolls very bouldery sandy loam, 8 to 50 percent slopes—1 percent

Aspetill very gravelly sandy loam, moist, 15 to 50 percent slopes—1 percent

Component Description

Cloudburst and similar soils

Landform: Moraines

Slope: 15 to 50 percent

Parent material: Till derived from mixed rock sources

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Site index: Jeffrey pine—70

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 5 percent subrounded stones, 5 percent subrounded cobbles, 10 percent subrounded boulders

Layer 1—0 to 8 inches; extremely bouldery coarse sandy loam

Layer 2—8 to 16 inches; extremely bouldery coarse sandy loam

Layer 3—16 to 29 inches; extremely bouldery sandy clay loam

Layer 4—29 to 60 inches; extremely cobbly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F022AY116NV

Component Description

Murain and similar soils

Landform: Moraines

Slope: 15 to 50 percent

Parent material: Till derived from igneous and metamorphic rock

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 5 percent subrounded cobbles, 10 percent subrounded stones, 5 percent subrounded boulders

Layer 1—0 to 2 inches; extremely stony coarse sandy loam

Layer 2—2 to 7 inches; extremely cobbly coarse sandy loam

Layer 3—7 to 18 inches; extremely cobbly coarse sandy loam

Layer 4—18 to 26 inches; extremely stony sandy clay loam

Layer 5—26 to 41 inches; extremely stony sandy clay loam

Layer 6—41 to 60 inches; extremely cobbly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Component Description

Hardtil and similar soils

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Till derived from mixed rock sources and colluvium from granodiorite

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—mountain big sagebrush, currant, snowberry

Site index: Lodgepole pine—53

Typical profile:

Surface rock fragments: About 20 percent fine gravel, 15 percent gravel, 5 percent cobbles, 5 percent stones, 5 percent boulders

Layer 1—0 to 3 inches; gravelly loamy coarse sand

Layer 2—3 to 7 inches; very gravelly coarse sandy loam

Layer 3—7 to 18 inches; very gravelly coarse sandy loam

Layer 4—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 1.1 inches

Present flooding: None

Present ponding: None

Water table: Present

Natural drainage class: Moderately well drained

Interpretive Groups

Nonirrigated land capability: 7e

Ecological site: F022AY130NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop

Composition: 0 to 5 percent

Landform: Mountains

Ecological site: None

Aspetill and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Stumpatil and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Moraines

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry

Ecological site: F022AY127NV

Heenlake and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, Thurber's

needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Aquic Argicryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive Aquic Argicryolls

Slope: 8 to 50 percent

Landform: Footslopes of moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Aspetill and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Moraines

Typical vegetation: Mountain brome, slender

wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

500—Chrisflat very gravelly coarse sandy loam, 4 to 15 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountain valleys or canyons

Elevation: 6,000 to 7,500

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 50 to 70 days

Composition

Chrisflat very gravelly coarse sandy loam, 4 to 15 percent slopes—90 percent

Pachic Haploxerolls very gravelly coarse sandy loam, 4 to 15 percent slopes—7 percent

Aquic Cumulic Haploxerolls very gravelly sandy loam, 4 to 15 percent slopes—1 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent

Typic Cryaquolls very gravelly sandy loam, 0 to 8 percent slopes—1 percent

Component Description

Chrisflat and similar soils

Landform: Fan remnants

Slope: 4 to 15 percent

Parent material: Alluvium from igneous and metamorphic rocks

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 4 percent subrounded stones, 3 percent subrounded boulders

Layer 1—0 to 7 inches; very gravelly coarse sandy loam

Layer 2—7 to 26 inches; very gravelly coarse sandy loam

Layer 3—26 to 60 inches; extremely stony sandy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: Very rare

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Pachic Haploxerolls and similar soils

Composition: 0 to 7 percent

Classification: Loamy-skeletal, mixed, superactive, frigid Pachic Haploxerolls

Slope: 4 to 15 percent

Landform: Fan remnants

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Aquic Cumulic Haploxerolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive, mesic Aquic Cumulic Haploxerolls

Slope: 4 to 15 percent

Landform: Stream terraces

Typical vegetation: Forest canopy—quaking aspen
Forest understory—slender wheatgrass, Nevada bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls

Slope: 0 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Typic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 0 to 8 percent

Landform: Flood plains

Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

510—Rubble land-Lithnip-Rock outcrop association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 9,000 to 12,000

Precipitation: 35 to 55 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Rubble land—40 percent

Lithnip extremely gravelly sandy loam, moist, 8 to 30 percent slopes—20 percent

Rock outcrop—15 percent

Fishsnooze very gravelly peaty coarse sandy loam, cold, 8 to 50 percent slopes—10 percent

Typic Cryorthents extremely stony sandy loam, 15 to 50 percent slopes—4 percent

Fishsnooze very gravelly sandy loam, cool, 30 to 75 percent slopes—2 percent

Dunderberg very gravelly ashy sandy loam, warm, 15 to 50 percent slopes—2 percent

Thief ridge very stony fine sandy loam, moist, 8 to 50 percent slopes—2 percent

Aspocket gravelly sandy loam, moist, 15 to 50 percent slopes—1 percent

Hopeval mucky loam, wet, 4 to 15 percent slopes—1 percent

Typic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—1 percent

Chutes—1 percent

Glaciers—1 percent

Component Description

Rubble land

Landform: Scree slopes

Interpretive Groups

Ecological site: None

Component Description

Lithnip and similar soils

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Typical profile:

Surface rock fragments: About 60 percent gravel, 1 percent stones

Layer 1—0 to 1 inch; extremely gravelly sandy loam

Layer 2—1 to 5 inches; very gravelly sandy loam

Layer 3—5 to 15 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 4 to 10 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 0.3 inch

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: R022AY032NV—Alpine ridge

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Component Description

Fishsnooze and similar soils

Landform: Northeast facing mountains

Slope: 8 to 50 percent, northeast aspect

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Bluegrass, other perennial forbs, whitebark pine

Typical profile:

Surface rock fragments: About 5 percent cobbles, 35 percent gravel

Layer 1—0 to 1 inch; very gravelly peaty coarse sandy loam

Layer 2—1 to 9 inches; very gravelly coarse sandy loam

Layer 3—9 to 13 inches; extremely gravelly coarse sandy loam

Layer 4—13 to 35 inches; extremely cobbly coarse sandy loam

Layer 5—35 to 45 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY051NV—Krummholz

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Typic Cryorthents and similar soils

Composition: 0 to 4 percent

Classification: Loamy-skeletal, mixed, superactive Typic Cryorthents

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Ecological site: R022AY032NV—Alpine ridge

Dunderberg and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Moraines

Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY021NV—South slope 30+ P.Z.

Fishsnooze and similar soils

Composition: 0 to 2 percent

Slope: 30 to 75 percent, northeast aspect

Landform: Northeast facing mountains

Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs

Ecological site: F022AY126NV

Thiefridge and similar soils

Composition: 0 to 2 percent

Slope: 8 to 50 percent

Landform: Shoulders of mountains

Typical vegetation: Other perennial forbs, needlegrass, bluegrass, curleaf mountainmahogany, snowberry

Ecological site: R022AY025NV—Mahogany thicket

Aspocket and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Needlegrass, mountain brome, other perennial forbs, quaking aspen, snowberry

Ecological site: R022AY046NV—Aspen thicket

Chutes

Composition: 0 to 1 percent

Landform: Avalanche chutes

Ecological site: None

Glaciers

Composition: 0 to 1 percent

Landform: Glaciers

Ecological site: None

Hopeval and similar soils

Composition: 0 to 1 percent

Slope: 4 to 15 percent

Landform: Flood plains

Typical vegetation: Nebraska sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses

Ecological site: R022AY016NV—Wet meadow

Typic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls
 Slope: 2 to 8 percent
 Landform: Flood plains
 Typical vegetation: Sedge, tufted hairgrass, Kentucky bluegrass, other perennial forbs, willow
 Ecological site: R022AY033NV—Wet willow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

511—Rock outcrop-Snowtell-Forsell complex, 8 to 30 percent slopes

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 8,000 to 9,500
 Precipitation: 30 to 50 inches
 Air temperature: 36 to 39 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Rock outcrop—40 percent
 Snowtell very gravelly coarse sandy loam, 8 to 30 percent slopes—30 percent
 Forsell very gravelly peaty coarse sandy loam, 8 to 30 percent slopes—15 percent
 Sonorapass very gravelly coarse sandy loam, 8 to 30 percent slopes—5 percent
 Hardtil gravelly loamy coarse sand, warm, 30 to 75 percent slopes—4 percent
 Sofgran gravelly loamy coarse sand, dry, 4 to 15 percent slopes—2 percent
 Waterpeak gravelly loamy coarse sand, cool, 8 to 30 percent slopes—1 percent
 Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent
 Forsell very gravelly peaty coarse sandy loam, cool, 15 to 50 percent slopes—1 percent
 Aquic Haplocryolls very gravelly sandy loam, 0 to 8 percent slopes—1 percent

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Component Description

Snowtell and similar soils

Landform: Mountains
 Slope: 8 to 30 percent
 Parent material: Till from mixed rock sources
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry
 Site index: Lodgepole pine—20

Typical profile:

Surface rock fragments: About 5 percent subrounded cobbles, 5 percent subrounded stones, 35 percent subrounded gravel, 5 percent subrounded boulders
 Layer 1—0 to 3 inches; very gravelly coarse sandy loam
 Layer 2—3 to 10 inches; very gravelly coarse sandy loam
 Layer 3—10 to 20 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 4 to 10 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 0.8 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: F022AY127NV

Component Description

Forsell and similar soils

Landform: Mountains
 Slope: 8 to 30 percent
 Parent material: Till derived from mixed rock sources
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry
 Site index: Lodgepole pine—40

Typical profile:

Surface rock fragments: About 40 percent subrounded gravel, 15 percent subrounded cobbles, 10 percent subrounded stones, 4 percent subrounded boulders
 Layer 1—0 to 1 inch; very gravelly peaty coarse sandy loam
 Layer 2—1 to 11 inches; very gravelly coarse sandy loam
 Layer 3—11 to 27 inches; extremely stony sandy loam
 Layer 4—27 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low
 Depth to restrictive feature: Bedrock (lithic): 60 to 80 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 5 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F022AY127NV
 Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Sonorapass and similar soils**

Composition: 0 to 5 percent
 Slope: 8 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry
 Ecological site: F022AY127NV

Hardtil and similar soils

Composition: 0 to 4 percent
 Slope: 30 to 75 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—mountain big sagebrush, currant, snowberry
 Ecological site: F022AY130NV

Sofgran dry and similar soils

Composition: 0 to 2 percent
 Slope: 4 to 15 percent, south aspect
 Landform: South facing footslopes of mountains
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry
 Ecological site: F022AY127NV

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent
 Classification: Loamy-skeletal, mixed, superactive Aquic Haplocryolls
 Slope: 0 to 8 percent
 Landform: Stream terraces
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—creeping wildrye, Woods' rose, willow, Kentucky bluegrass
 Ecological site: R022AY015NV—Streambank

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent
 Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls
 Slope: 0 to 8 percent
 Landform: Dissected plains
 Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs
 Ecological site: R022AY017NV—Semi-wet meadow

Forsell cool and similar soils

Composition: 0 to 1 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—mountain hemlock
 Forest understory—Currant, Ross' sedge
 Ecological site: F022AY114NV

Waterpeak and similar soils

Composition: 0 to 1 percent
 Slope: 8 to 30 percent
 Landform: Footslopes of mountains
 Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome
 Ecological site: R022AY010NV—Mountain shoulders 30+ P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section

"Forest land" section
 "Engineering" and "Soil Properties" sections

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

512—Rock outcrop-Snowtell complex, 30 to 75 percent slopes

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 8,000 to 9,500
 Precipitation: 30 to 50 inches
 Air temperature: 36 to 39 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Rock outcrop—50 percent
 Snowtell very gravelly coarse sandy loam, 50 to 75
 percent slopes—40 percent
 Sonorapass very gravelly coarse sandy loam, 15 to 50
 percent slopes—5 percent
 Hardtil gravelly loamy coarse sand, warm, 8 to 30
 percent slopes—3 percent
 Snowtell very gravelly coarse sandy loam, 8 to 30
 percent slopes—2 percent

Component Description

Rock outcrop
 Landform: Mountains

Interpretive Groups
 Ecological site: None

Component Description

Snowtell and similar soils

Landform: Mountains
 Slope: 50 to 75 percent
 Parent material: Till from mixed rock sources
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain
 big sagebrush, currant, snowberry
 Site index: Lodgepole pine—20

Typical profile:

Surface rock fragments: About 35 percent subrounded
 gravel, 5 percent subrounded cobbles, 5 percent
 subrounded stones, 5 percent subrounded boulders
 Layer 1—0 to 3 inches; very gravelly coarse sandy loam
 Layer 2—3 to 10 inches; very gravelly coarse sandy
 loam
 Layer 3—10 to 20 inches; bedrock

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 4 to 10
 inches
 Saturated hydraulic conductivity class (root zone): High,
 (Permeability class: Moderately rapid)
 Available water capacity: About 0.8 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: F022AY127NV

Typical soil descriptions including ranges in
 characteristics are in the "Classification of the Soils"
 section.

Contrasting Inclusions

Sonorapass and similar soils

Composition: 0 to 5 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain
 big sagebrush, currant, snowberry
 Ecological site: F022AY127NV

Hardtil and similar soils

Composition: 0 to 3 percent
 Slope: 8 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—Jeffrey pine Forest
 understory—mountain big sagebrush, currant,
 snowberry
 Ecological site: F022AY130NV

Snowtell and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain
 big sagebrush, currant, snowberry
 Ecological site: F022AY127NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

513—Rubble land-Holdon-Rock outcrop complex, 30 to 100 percent slopes**Map Unit Setting**

MLRA: 22A

Landscape: Mountains

Elevation: 10,000 to 11,500

Precipitation: 20 to 30 inches

Air temperature: 34 to 37 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Rubble land—40 percent

Holdon extremely gravelly loamy coarse sand, 30 to 75 percent slopes—30 percent

Rock outcrop—15 percent

Coldtree very gravelly loamy coarse sand, 30 to 75 percent slopes—4 percent

Dab extremely gravelly sandy loam, 15 to 50 percent slopes—4 percent

Longday extremely gravelly fine sandy loam, 15 to 50 percent slopes—3 percent

Typic Cryorthents extremely stony sandy loam, 15 to 50 percent slopes—2 percent

Coldtree very gravelly loamy coarse sand, cool, 30 to 75 percent slopes—2 percent

Component Description**Rubble land**

Landform: Scree slopes

Interpretive Groups

Ecological site: None

Component Description**Holdon and similar soils**

Landform: Mountains

Slope: 30 to 75 percent

Parent material: Colluvium and residuum from volcanic and metavolcanic rock

Typical vegetation: Other shrubs, other perennial forbs, bluegrass, needlegrass

Typical profile:

Surface rock fragments: About 18 percent subrounded cobbles, 4 percent subrounded boulders, 65 percent subrounded gravel

Layer 1—0 to 3 inches; extremely gravelly loamy coarse sand

Layer 2—3 to 23 inches; extremely gravelly sandy loam

Layer 3—23 to 47 inches; cobbles

Layer 4—47 to 57 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 1.4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY032NV—Alpine ridge

Component Description**Rock outcrop**

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Coldtree and similar soils**

Composition: 0 to 4 percent

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs

Ecological site: F022AY126NV

Dab and similar soils

Composition: 0 to 4 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain brome, spike fescue, lupine, melic, bluegrass, mountain big sagebrush

Ecological site: R022AY055NV—Mountain shoulders 20-30 P.Z.

Longday and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Coldtree cold and similar soils

Composition: 0 to 2 percent

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Bluegrass, other perennial forbs, whitebark pine

Ecological site: R022AY051NV—Krummholz

Typic Cryorthents and similar soils

Composition: 0 to 2 percent

Classification: Loamy-skeletal, mixed, superactive Typic Cryorthents

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Ecological site: R022AY032NV—Alpine ridge

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

520—Canfire-Crispy-Rock outcrop association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 6,000 to 7,500

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 50 to 70 days

Composition

Canfire very gravelly sandy loam, 30 to 75 percent slopes—40 percent

Crispy very gravelly loam, 30 to 75 percent slopes—35 percent

Rock outcrop—10 percent

Dogbed very gravelly sandy loam, 15 to 50 percent slopes—4 percent

Loope very gravelly sandy loam, 15 to 50 percent slopes—4 percent

Celeridge extremely bouldery sandy loam, 8 to 30 percent slopes—3 percent

Aspocket gravelly sandy loam, 8 to 30 percent slopes—2 percent

Joecut very gravelly peaty loam, 15 to 50 percent slopes—1 percent

Aquic Cumulic Haploxerolls very gravelly sandy loam, 4 to 15 percent slopes—1 percent

Component Description

Canfire and similar soils

Landform: South facing mountains

Slope: 30 to 75 percent, south aspect

Parent material: Colluvium derived from metamorphic rocks over residuum derived from metamorphic rocks

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—mountain big sagebrush, antelope bitterbrush

Site index: Singleleaf pinyon—75 at an age base of 0 years

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 10 percent subrounded cobbles, 3 percent subrounded stones, 1 percent subrounded boulders,

6 percent flagstones, 18 percent channers

Layer 1—0 to 2 inches; very gravelly sandy loam

Layer 2—2 to 7 inches; very gravelly loam

Layer 3—7 to 17 inches; very gravelly loam

Layer 4—17 to 27 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone):
 Moderately High, (Permeability class: Moderate)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: F026XY104NV

Component Description

Crispy and similar soils

Landform: North facing mountains
 Slope: 30 to 75 percent, north aspect
 Parent material: Colluvium derived from metamorphic rocks over residuum derived from metamorphic rocks
 Typical vegetation: Forest canopy—singleleaf pinyon
 Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush
 Site index: Singleleaf pinyon—75 at an age base of 0 years

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 5 percent subrounded cobbles, 3 percent subrounded stones
 Layer 1—0 to 7 inches; very gravelly loam
 Layer 2—7 to 15 inches; very gravelly loam
 Layer 3—15 to 25 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone):
 Moderately High, (Permeability class: Moderate)
 Available water capacity: About 1.4 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: F026XY044NV

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Dogbed and similar soils

Composition: 0 to 4 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush
 Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Loope and similar soils

Composition: 0 to 4 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush
 Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Celeridge and similar soils

Composition: 0 to 3 percent
 Slope: 8 to 30 percent
 Landform: Shoulders of mountains
 Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany
 Ecological site: R022AY024NV—Mahogany Savanna

Aspocket and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Aquic Cumulic Haploxerolls and similar soils

Composition: 0 to 1 percent
 Classification: Sandy-skeletal, mixed, mesic Aquic
 Cumulic Haploxerolls
 Slope: 4 to 15 percent
 Landform: Stream terraces

Typical vegetation: Forest canopy—quaking aspen
 Forest understory—slender wheatgrass, Nevada
 bluegrass, other perennial forbs, Woods' rose, willow
 Ecological site: F022AY104NV

Joecut and similar soils

Composition: 0 to 1 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Forest canopy—white fir Forest
 understory—needlegrass, bluegrass, other perennial
 forbs, Ceanothus, snowberry
 Ecological site: F022AY108NV

Management

For information about managing this map unit, see the
 following sections and associated tables in this
 publication:

"Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

530—Elaero-Lockgate-Granhogany association

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 7,000 to 8,500
 Precipitation: 16 to 24 inches
 Air temperature: 39 to 45 degrees Fahrenheit
 Frost-free period: 50 to 70 days

Composition

Elaero very gravelly loamy coarse sand, 30 to 50
 percent slopes—35 percent
 Lockgate very gravelly loamy coarse sand, 30 to 75
 percent slopes—25 percent
 Granhogany very gravelly loamy coarse sand, 15 to 50
 percent slopes—15 percent
 Granidry very gravelly coarse sandy loam, 15 to 50
 percent slopes—10 percent
 Rock outcrop—3 percent
 Toejom very gravelly coarse sand, 15 to 50 percent
 slopes—3 percent
 Pimogran very gravelly loamy coarse sand, 15 to 50
 percent slopes—3 percent
 Corbett very bouldery loamy coarse sand, 15 to 50
 percent slopes—2 percent
 Lostcannon very gravelly coarse sandy loam, 8 to 50
 percent slopes—2 percent
 Granhogany very gravelly loamy coarse sand, moist, 15
 to 50 percent slopes—2 percent

Component Description

Elaero and similar soils

Landform: Mountains
 Slope: 30 to 50 percent
 Parent material: Colluvium derived from granodiorite
 over residuum derived from granodiorite
 Typical vegetation: Needlegrass, Indian ricegrass, other
 perennial forbs, mountain big sagebrush, antelope
 bitterbrush

Typical profile:

Surface rock fragments: About 25 percent subrounded
 gravel, 6 percent subrounded stones, 6 percent
 subrounded cobbles
 Layer 1—0 to 6 inches; very gravelly loamy coarse sand
 Layer 2—6 to 16 inches; very gravelly sandy loam
 Layer 3—16 to 21 inches; very gravelly sandy loam
 Layer 4—21 to 31 inches; bedrock

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: High
 Depth to restrictive feature: Bedrock (paralithic): 20 to 40
 inches
 Saturated hydraulic conductivity class (root zone): High,
 (Permeability class: Moderately rapid)
 Available water capacity: About 1.3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R022AY043NV—South slope 14-16 P.Z.

Component Description

Lockgate and similar soils

Landform: North facing mountains
 Slope: 30 to 75 percent, north aspect
 Parent material: Colluvium derived from granodiorite
 over residuum derived from granodiorite
 Typical vegetation: Western needlegrass, other
 perennial forbs, basin wildrye, mountain big
 sagebrush

Typical profile:

Surface rock fragments: About 35 percent subrounded
 gravel, 4 percent subrounded stones, 4 percent
 subrounded cobbles, 3 percent subrounded boulders
 Layer 1—0 to 14 inches; very gravelly loamy coarse
 sand

Layer 2—14 to 23 inches; extremely stony coarse sandy loam

Layer 3—23 to 34 inches; extremely gravelly coarse sandy loam

Layer 4—34 to 42 inches; extremely gravelly loamy coarse sand

Layer 5—42 to 52 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Component Description

Granhogany and similar soils

Landform: Mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Typical profile:

Surface rock fragments: About 10 percent subrounded cobbles, 35 percent subrounded gravel

Layer 1—0 to 4 inches; very gravelly loamy coarse sand

Layer 2—4 to 15 inches; very gravelly loamy coarse sand

Layer 3—15 to 25 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.6 inch

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: R022AY024NV—Mahogany Savanna

Component Description

Granidry and similar soils

Landform: South facing mountains

Slope: 15 to 50 percent, south aspect

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Desert needlegrass, lupine, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 40 percent subrounded gravel, 6 percent subrounded cobbles, 6 percent subrounded stones, 6 percent subrounded boulders

Layer 1—0 to 3 inches; very gravelly coarse sandy loam

Layer 2—3 to 11 inches; very gravelly coarse sandy loam

Layer 3—11 to 16 inches; extremely gravelly sandy clay loam

Layer 4—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY048NV—Granitic south slope 14-16 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Pimogran and similar soils**

Composition: 0 to 3 percent

Slope: 15 to 50 percent, north aspect

Landform: North facing mountains

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—needlegrass, muttongrass,
mountain big sagebrush, currant, snowberry,
antelope bitterbrush

Ecological site: F026XY044NV

Rock outcrop

Composition: 0 to 3 percent

Landform: Mountains

Ecological site: None

Toejom and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent, south aspect

Landform: South facing mountains

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—mountain big sagebrush,
antelope bitterbrush

Ecological site: F026XY104NV

Corbett and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest

understory—other perennial forbs, mountain big
sagebrush, snowberry, currant

Ecological site: F022AY116NV

Granhogany and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Needlegrass, bluegrass, other

perennial forbs, curleaf mountainmahogany,
snowberry

Ecological site: R022AY025NV—Mahogany thicket

Lostcannon and similar soils

Composition: 0 to 2 percent

Slope: 8 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender
wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

ManagementFor information about managing this map unit, see the
following sections and associated tables in this
publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

531—Elaero association***Map Unit Setting***

MLRA: 22A

Landscape: Mountains

Elevation: 7,000 to 8,500

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 50 to 70 days

CompositionElaero gravelly coarse sandy loam, moist, 4 to 15
percent slopes—55 percentElaero very gravelly loamy coarse sand, 15 to 50
percent slopes—30 percentToejom very gravelly coarse sand, 15 to 50 percent
slopes—4 percentDelhew very gravelly coarse sandy loam, 15 to 50
percent slopes—4 percentGranhogany very gravelly loamy coarse sand, 8 to 30
percent slopes—3 percentGrandridge very gravelly coarse sandy loam, 4 to 15
percent slopes—2 percentLockgate very gravelly loamy coarse sand, warm, 4 to
15 percent slopes—2 percent***Component Description*****Elaero and similar soils**

Landform: Shoulders of mountains

Slope: 4 to 15 percent

Parent material: Colluvium derived from granodiorite
over residuum derived from granodioriteTypical vegetation: Western needlegrass, other
perennial forbs, mountain big sagebrush, antelope
bitterbrush**Typical profile:**Surface rock fragments: About 20 percent subrounded
gravel, 2 percent subrounded stones, 4 percent
subrounded cobbles

Layer 1—0 to 6 inches; gravelly coarse sandy loam

Layer 2—6 to 16 inches; very gravelly sandy loam

Layer 3—16 to 21 inches; very gravelly sandy loam

Layer 4—21 to 31 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
 Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7e
 Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Component Description

Elaero and similar soils

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Needlegrass, Indian ricegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 25 percent subrounded gravel, 6 percent subrounded stones, 6 percent subrounded cobbles
 Layer 1—0 to 6 inches; very gravelly loamy coarse sand
 Layer 2—6 to 16 inches; very gravelly sandy loam
 Layer 3—16 to 21 inches; very gravelly sandy loam
 Layer 4—21 to 31 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
 Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 1.3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R022AY043NV—South slope 14-16 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Delhew and similar soils

Composition: 0 to 4 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, snowberry
 Ecological site: R022AY052NV—Gravelly slope 16+ P.Z.

Toejom and similar soils

Composition: 0 to 4 percent
 Slope: 15 to 50 percent, south aspect
 Landform: South facing mountains
 Typical vegetation: Forest canopy—singleleaf pinyon
 Forest understory—mountain big sagebrush, antelope bitterbrush
 Ecological site: F026XY104NV

Granhogany and similar soils

Composition: 0 to 3 percent
 Slope: 8 to 30 percent
 Landform: Mountains
 Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany
 Ecological site: R022AY024NV—Mahogany Savanna

Grandridge and similar soils

Composition: 0 to 2 percent
 Slope: 4 to 15 percent
 Landform: Mountains
 Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass
 Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Lockgate warm and similar soils

Composition: 0 to 2 percent
 Slope: 4 to 15 percent, north aspect
 Landform: North facing mountains
 Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush
 Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

532—Elaero-Granidry-Rock outcrop association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 7,000 to 8,500

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 50 to 70 days

Composition

Elaero very gravelly loamy coarse sand, 30 to 75 percent slopes—55 percent

Granidry very gravelly coarse sandy loam, 30 to 75 percent slopes—20 percent

Rock outcrop—10 percent

Lockgate very gravelly loamy coarse sand, 15 to 50 percent slopes—5 percent

Granhogany very gravelly loamy coarse sand, 15 to 50 percent slopes—4 percent

Corbett very bouldery loamy coarse sand, 30 to 50 percent slopes—3 percent

Lostcannon very gravelly coarse sandy loam, 8 to 50 percent slopes—2 percent

Waterpeak very bouldery coarse sand, 30 to 75 percent slopes—1 percent

Component Description

Elaero and similar soils

Landform: Backslopes of mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Needlegrass, Indian ricegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 25 percent subrounded gravel, 6 percent subrounded stones, 6 percent subrounded cobbles

Layer 1—0 to 6 inches; very gravelly loamy coarse sand

Layer 2—6 to 16 inches; very gravelly sandy loam

Layer 3—16 to 21 inches; very gravelly sandy loam

Layer 4—21 to 31 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 1.3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY043NV—South slope 14-16 P.Z.

Component Description

Granidry and similar soils

Landform: South facing backslopes of mountains

Slope: 30 to 75 percent, south aspect

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Desert needlegrass, lupine, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 45 percent subrounded gravel, 5 percent subrounded cobbles, 5 percent

subrounded stones, 5 percent subrounded boulders

Layer 1—0 to 3 inches; very gravelly coarse sandy loam

Layer 2—3 to 11 inches; very gravelly coarse sandy loam

Layer 3—11 to 16 inches; extremely gravelly sandy clay loam

Layer 4—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY048NV—Granitic south slope
14-16 P.Z.

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Lockgate and similar soils

Composition: 0 to 5 percent

Slope: 15 to 50 percent, north aspect

Landform: North facing mountains

Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush

Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Granhogany and similar soils

Composition: 0 to 4 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Corbett and similar soils

Composition: 0 to 3 percent

Slope: 30 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Lostcannon and similar soils

Composition: 0 to 2 percent

Slope: 8 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Waterpeak and similar soils

Composition: 0 to 1 percent

Slope: 30 to 75 percent

Landform: Shoulders of mountains

Typical vegetation: Western needlegrass, mountain

brome, other perennial forbs, mountain big

sagebrush, antelope bitterbrush

Ecological site: R022AY021NV—South slope 30+ P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

540—Lostcannon association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 7,500 to 10,000

Precipitation: 20 to 45 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Lostcannon very gravelly coarse sandy loam, moist, 8 to 30 percent slopes—45 percent

Lostcannon very gravelly coarse sandy loam, 8 to 30 percent slopes—40 percent

Waterpeak very bouldery coarse sand, moist, 8 to 30 percent slopes—4 percent

Sofgran gravelly loamy coarse sand, dry, 8 to 30 percent slopes—3 percent

Lockgate very gravelly loamy coarse sand, 15 to 50 percent slopes—2 percent

Corbett very bouldery loamy coarse sand, 15 to 50 percent slopes—2 percent

Aquic Haplocryolls very bouldery sandy loam, 4 to 15 percent slopes—2 percent

Cumulic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—1 percent

Lostcannon very gravelly coarse sandy loam, moist, 30 to 50 percent slopes—1 percent

Component Description

Lostcannon moist and similar soils

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Needlegrass, mountain brome, other perennial forbs, quaking aspen, snowberry

Typical profile:

Surface rock fragments: About 25 percent subrounded gravel, 6 percent subrounded cobbles, 6 percent subrounded stones, 6 percent subrounded boulders

Layer 1—0 to 18 inches; very gravelly coarse sandy loam

Layer 2—18 to 25 inches; extremely gravelly coarse sandy loam

Layer 3—25 to 36 inches; extremely gravelly coarse sandy loam

Layer 4—36 to 60 inches; very gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY046NV—Aspen thicket

Component Description

Lostcannon and similar soils

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Site index: Quaking aspen—40 at an age base of 50 years

Typical profile:

Surface rock fragments: About 25 percent subrounded gravel, 6 percent subrounded stones, 6 percent subrounded cobbles

Layer 1—0 to 18 inches; very gravelly coarse sandy loam

Layer 2—18 to 25 inches; extremely gravelly coarse sandy loam

Layer 3—25 to 36 inches; extremely gravelly coarse sandy loam

Layer 4—36 to 60 inches; very gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY103NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Waterpeak moist and similar soils

Composition: 0 to 4 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush

Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Sofgran dry and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent, south aspect

Landform: South facing backslopes of mountains

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry

Ecological site: F022AY127NV

Aquic Haplocryolls and similar soils

Composition: 0 to 2 percent

Classification: Loamy-skeletal, isotic Aquic Haplocryolls

Slope: 4 to 15 percent

Landform: Foothills of mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada

bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Corbett and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest

understory—other perennial forbs, mountain big

sagebrush, snowberry, currant

Ecological site: F022AY116NV

Lockgate and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent, north aspect

Landform: North facing mountains

Typical vegetation: Western needlegrass, other

perennial forbs, basin wildrye, mountain big

sagebrush

Ecological site: R022AY023NV—Loamy slope 16-20
P.Z.**Cumulic Cryaquolls and similar soils**

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive

Cumulic Cryaquolls

Slope: 2 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted

hairgrass, Baltic rush, bluegrass, other perennial

grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Lostcannon moist and similar soils

Composition: 0 to 1 percent

Slope: 30 to 50 percent

Landform: Mountains

Typical vegetation: Needlegrass, mountain brome, other

perennial forbs, quaking aspen, snowberry

Ecological site: R022AY046NV—Aspen thicket

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

560—Dunderberg-Conwayridge association**Map Unit Setting**

MLRA: 22A

Landscape: Mountain valleys or canyons

Elevation: 8,000 to 9,500

Precipitation: 30 to 40 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 40 to 60 days

Composition

Dunderberg very gravelly ashy sandy loam, 8 to 30 percent slopes—30 percent

Dunderberg very gravelly ashy sandy loam, warm, 8 to 30 percent slopes—25 percent

Conwayridge extremely gravelly ashy loam, 8 to 30 percent slopes—20 percent

Dunderberg very gravelly ashy sandy loam, moist, 8 to 30 percent slopes—10 percent

Stumpatil very gravelly coarse sandy loam, dry, 8 to 30 percent slopes—3 percent

Dunderberg very gravelly ashy sandy loam, dry, 8 to 30 percent slopes—3 percent

Aspetill very gravelly sandy loam, 4 to 30 percent slopes—2 percent

Aquic Argicryolls very bouldery sandy loam, 4 to 30 percent slopes—1 percent

Aquic Haplocryolls very gravelly sandy loam, 4 to 15 percent slopes—1 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent

Typic Cryaquolls very gravelly sandy loam, 0 to 8 percent slopes—1 percent

Vitrantic Haplocryolls very gravelly ashy sandy loam, 8 to 30 percent slopes—1 percent

Vitrantic Haplocryolls very gravelly ashy sandy loam, 8 to 30 percent slopes—1 percent

Hopeval very fine sandy loam, 0 to 8 percent slopes—1 percent

Component Description**Dunderberg and similar soils**

Landform: North facing moraines

Slope: 8 to 30 percent, north aspect

Parent material: Till derived from mixed rock sources

Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome

Typical profile:

Surface rock fragments: About 55 percent subrounded gravel, 4 percent subrounded stones, 4 percent subrounded boulders

Layer 1—0 to 5 inches; very gravelly ashy sandy loam

Layer 2—5 to 9 inches; extremely gravelly ashy sandy loam

Layer 3—9 to 28 inches; extremely cobbly ashy sandy loam

Layer 4—28 to 39 inches; extremely gravelly ashy sandy loam

Layer 5—39 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY010NV—Mountain shoulders 30+ P.Z.

Component Description**Dunderberg warm and similar soils**

Landform: South facing moraines

Slope: 8 to 30 percent, south aspect

Parent material: Till derived from mixed rock sources

Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 55 percent subrounded gravel, 4 percent subrounded stones, 4 percent subrounded boulders

Layer 1—0 to 5 inches; very gravelly ashy sandy loam

Layer 2—5 to 9 inches; extremely gravelly ashy sandy loam

Layer 3—9 to 28 inches; extremely cobbly ashy sandy loam

Layer 4—28 to 39 inches; extremely gravelly ashy sandy loam

Layer 5—39 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY021NV—South slope 30+ P.Z.

Component Description**Conwayridge and similar soils**

Landform: Moraines

Slope: 8 to 30 percent

Parent material: Volcanic ash and till derived from igneous and metamorphic rock

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Typical profile:

Surface rock fragments: About 50 percent subrounded gravel, 10 percent subrounded cobbles, 5 percent subrounded stones, 5 percent subrounded boulders

Layer 1—0 to 4 inches; extremely gravelly ashy loam

Layer 2—4 to 11 inches; extremely gravelly ashy loam

Layer 3—11 to 63 inches; extremely cobbly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Component Description**Dunderberg moist and similar soils**

Landform: Moraines

Slope: 8 to 30 percent

Parent material: Till derived from mixed rock sources

Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush

Typical profile:

Surface rock fragments: About 55 percent subrounded gravel, 4 percent subrounded stones, 4 percent subrounded boulders

Layer 1—0 to 5 inches; very gravelly ashy sandy loam

Layer 2—5 to 9 inches; extremely gravelly ashy sandy loam

Layer 3—9 to 28 inches; extremely cobbly ashy sandy loam

Layer 4—28 to 39 inches; extremely gravelly ashy sandy loam

Layer 5—39 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Dunderberg dry and similar soils**

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Western needlegrass, sedge, lupine, mountain big sagebrush

Ecological site: R022AY050NV—Channery moraine

Stumpatil dry and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry

Ecological site: F022AY127NV

Aspetill and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Aquic Argicryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive Aquic Argicryolls

Slope: 4 to 30 percent

Landform: Footslopes of moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive Aquic Haplocryolls

Slope: 4 to 15 percent

Landform: Stream terraces

Typical vegetation: Forest canopy—quaking aspen

Forest understory—creeping wildrye, Woods' rose, willow, Kentucky bluegrass

Ecological site: R022AY015NV—Streambank

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls

Slope: 0 to 8 percent

Landform: Dissected plains

Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

Hopeval and similar soils

Composition: 0 to 1 percent

Slope: 0 to 8 percent

Landform: Flood plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Typic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 0 to 8 percent

Landform: Flood plains

Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

Vitrantic Haplocryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive Vitrantic Haplocryolls

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

561—Dunderberg association

Map Unit Setting

MLRA: 22A

Landscape: Mountain valleys or canyons

Elevation: 8,000 to 9,500

Precipitation: 30 to 45 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 40 to 60 days

Composition

Dunderberg very gravelly ashy sandy loam, 8 to 30 percent slopes—40 percent

Dunderberg very gravelly ashy sandy loam, warm, 8 to 30 percent slopes—30 percent

Dunderberg very gravelly ashy sandy loam, moist, 8 to 30 percent slopes—15 percent

Vitrantic Haplocryolls very gravelly ashy sandy loam, 8 to 30 percent slopes—5 percent

Stumpatil very gravelly coarse sandy loam, dry, 8 to 30 percent slopes—2 percent

Aspetill very gravelly sandy loam, 4 to 30 percent slopes—2 percent

Aquic Argicryolls very bouldery sandy loam, 4 to 30 percent slopes—1 percent

Aquic Haplocryolls very gravelly sandy loam, 4 to 15 percent slopes—1 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent

Hopeval very fine sandy loam, 0 to 8 percent slopes—1 percent

Typic Cryaquolls very gravelly sandy loam, 0 to 8 percent slopes—1 percent

Vitrantic Haplocryolls very gravelly ashy sandy loam, 8 to 30 percent slopes—1 percent

Component Description

Dunderberg and similar soils

Landform: North facing moraines

Slope: 8 to 30 percent, north aspect

Parent material: Till derived from mixed rock sources

Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome

Typical profile:

Surface rock fragments: About 55 percent subrounded gravel, 4 percent subrounded stones, 4 percent subrounded boulders

Layer 1—0 to 5 inches; very gravelly ashy sandy loam

Layer 2—5 to 9 inches; extremely gravelly ashy sandy loam

Layer 3—9 to 28 inches; extremely cobbly ashy sandy loam

Layer 4—28 to 39 inches; extremely gravelly ashy sandy loam

Layer 5—39 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY010NV—Mountain shoulders
30+ P.Z.

Component Description

Dunderberg warm and similar soils

Landform: South facing moraines
Slope: 8 to 30 percent, south aspect
Parent material: Till derived from mixed rock sources
Typical vegetation: Western needlegrass, mountain
brome, other perennial forbs, mountain big
sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 55 percent subrounded
gravel, 4 percent subrounded stones, 4 percent
subrounded boulders
Layer 1—0 to 5 inches; very gravelly ashy sandy loam
Layer 2—5 to 9 inches; extremely gravelly ashy sandy
loam
Layer 3—9 to 28 inches; extremely cobbly ashy sandy
loam
Layer 4—28 to 39 inches; extremely gravelly ashy sandy
loam
Layer 5—39 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the
"Physical Properties of Soils" table for more
information.

Component Properties and Qualities

Runoff: Low
Saturated hydraulic conductivity class (root zone): High,
(Permeability class: Moderately rapid)
Available water capacity: About 6 inches
Present flooding: None
Present ponding: None
Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
Ecological site: R022AY021NV—South slope 30+ P.Z.

Component Description

Dunderberg moist and similar soils

Landform: Moraines
Slope: 8 to 30 percent
Parent material: Till derived from mixed rock sources
Typical vegetation: Western needlegrass, mountain
brome, melic, other perennial forbs, mountain big
sagebrush

Typical profile:

Surface rock fragments: About 55 percent subrounded
gravel, 4 percent subrounded stones, 4 percent
subrounded boulders
Layer 1—0 to 5 inches; very gravelly ashy sandy loam
Layer 2—5 to 9 inches; extremely gravelly ashy sandy
loam
Layer 3—9 to 28 inches; extremely cobbly ashy sandy
loam
Layer 4—28 to 39 inches; extremely gravelly ashy sandy
loam
Layer 5—39 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the
"Physical Properties of Soils" table for more
information.

Component Properties and Qualities

Runoff: Low
Saturated hydraulic conductivity class (root zone): High,
(Permeability class: Moderately rapid)
Available water capacity: About 6 inches
Present flooding: None
Present ponding: None
Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Typical soil descriptions including ranges in
characteristics are in the "Classification of the Soils"
section.

Contrasting Inclusions

Vitrantic Haplocryolls and similar soils

Composition: 0 to 5 percent
Classification: Loamy-skeletal, mixed, superactive
Vitrantic Haplocryolls
Slope: 8 to 30 percent
Landform: Moraines
Typical vegetation: Bluegrass, needlegrass, other
perennial forbs, mountain big sagebrush, curleaf
mountainmahogany
Ecological site: R022AY024NV—Mahogany Savanna

Aspetill and similar soils

Composition: 0 to 2 percent
Slope: 4 to 30 percent
Landform: Moraines

Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender
 wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Stumpatil dry and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Moraines
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain
 big sagebrush, currant, snowberry
 Ecological site: F022AY127NV

Aquic Argicryolls and similar soils

Composition: 0 to 1 percent
 Classification: Loamy-skeletal, mixed, superactive Aquic
 Argicryolls
 Slope: 4 to 30 percent
 Landform: Footslopes of moraines
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—slender wheatgrass, Nevada
 bluegrass, other perennial forbs, Woods' rose, willow
 Ecological site: F022AY104NV

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent
 Classification: Loamy-skeletal, mixed, superactive Aquic
 Haplocryolls
 Slope: 4 to 15 percent
 Landform: Stream terraces
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—creeping wildrye, Woods' rose,
 willow, Kentucky bluegrass
 Ecological site: R022AY015NV—Streambank

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent
 Classification: Coarse-loamy, mixed, superactive
 Cumulic Cryaquolls
 Slope: 0 to 8 percent
 Landform: Dissected plains
 Typical vegetation: Sedge, slender wheatgrass,
 bluegrass, other perennial forbs, willow
 Ecological site: R022AY034NV—Moist willow

Hopeval and similar soils

Composition: 0 to 1 percent
 Slope: 0 to 8 percent
 Landform: Flood plains
 Typical vegetation: Creeping bentgrass, sedge, tufted
 hairgrass, Baltic rush, bluegrass, other perennial
 grasses, other perennial forbs
 Ecological site: R022AY017NV—Semi-wet meadow

Typic Cryaquolls and similar soils

Composition: 0 to 1 percent
 Classification: Sandy-skeletal, mixed Typic Cryaquolls
 Slope: 0 to 8 percent
 Landform: Flood plains
 Typical vegetation: Sedge, slender wheatgrass,
 bluegrass, other perennial forbs, willow
 Ecological site: R022AY034NV—Moist willow

Vitrantic Haplocryolls and similar soils

Composition: 0 to 1 percent
 Classification: Loamy-skeletal, mixed, superactive
 Vitrantic Haplocryolls
 Slope: 8 to 30 percent
 Landform: Moraines
 Typical vegetation: Western needlegrass, spike fescue,
 other perennial forbs, mountain big sagebrush
 Ecological site: R022AY045NV—Gravelly loamy slope
 20-30 P.Z.

Management

For information about managing this map unit, see the
 following sections and associated tables in this
 publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

570—Angelwhine-Hawkinspeak-HawkrIDGE association

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 8,000 to 10,000
 Precipitation: 30 to 45 inches
 Air temperature: 36 to 39 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Angelwhine extremely gravelly coarse sandy loam, 15 to
 50 percent slopes—35 percent
 Hawkinspeak very gravelly sandy loam, 15 to 50 percent
 slopes—25 percent
 HawkrIDGE extremely gravelly coarse sandy loam, 4 to
 30 percent slopes—25 percent
 Angelwhine extremely gravelly coarse sandy loam,
 moist, 15 to 50 percent slopes—3 percent
 ThiefrIDGE very stony fine sandy loam, 8 to 30 percent
 slopes—2 percent
 Lithnip extremely gravelly sandy loam, moist, 30 to 75
 percent slopes—2 percent

Sumemeadow very gravelly peaty sandy loam, 15 to 50 percent slopes—2 percent
 Aspocket gravelly sandy loam, 15 to 50 percent slopes—1 percent
 Fishsnooze very gravelly sandy loam, cool, 15 to 50 percent slopes—1 percent
 Cumulic Cryaquolls very fine sandy loam, 4 to 15 percent slopes—1 percent
 Rock outcrop—1 percent
 Typic Cryaquolls very gravelly sandy loam, 4 to 15 percent slopes—1 percent
 Aquic Haplocryolls very gravelly sandy loam, 4 to 15 percent slopes—1 percent

Component Description

Angelwhine and similar soils

Landform: South facing mountains
 Slope: 15 to 50 percent, south aspect
 Parent material: Colluvium from andesitic tuff
 Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 1 percent subrounded boulders, 2 percent subrounded stones, 5 percent subrounded cobbles
 Layer 1—0 to 15 inches; extremely gravelly coarse sandy loam
 Layer 2—15 to 23 inches; very gravelly coarse sandy loam
 Layer 3—23 to 43 inches; very gravelly sandy clay loam
 Layer 4—43 to 60 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 6 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R022AY021NV—South slope 30+ P.Z.

Component Description

Hawkinspeak and similar soils

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders
 Layer 1—0 to 3 inches; very gravelly sandy loam
 Layer 2—3 to 9 inches; very gravelly sandy loam
 Layer 3—9 to 33 inches; very gravelly sandy clay loam
 Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R022AY010NV—Mountain shoulders 30+ P.Z.

Component Description

Hawkridge and similar soils

Landform: Shoulders of mountains
 Slope: 4 to 30 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Typical profile:

Surface rock fragments: About 3 percent stones, 5 percent cobbles, 50 percent gravel

Layer 1—0 to 1 inch; extremely gravelly coarse sandy loam
 Layer 2—1 to 7 inches; very gravelly sandy loam
 Layer 3—7 to 14 inches; very gravelly sandy clay loam
 Layer 4—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 7 to 14 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 1.3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Angelwhine moist and similar soils

Composition: 0 to 3 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Western needlegrass, mountain brome, melic, other perennial forbs, mountain big sagebrush
 Ecological site: R022AY031NV—Loamy slope 30+ P.Z.

Lithnip and similar soils

Composition: 0 to 2 percent
 Slope: 30 to 75 percent
 Landform: Shoulders of mountains
 Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs
 Ecological site: R022AY032NV—Alpine ridge

Sumeadow and similar soils

Composition: 0 to 2 percent
 Slope: 15 to 50 percent
 Landform: Mountains

Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry
 Ecological site: F022AY127NV

Thiefridge and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Shoulders of mountains
 Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany
 Ecological site: R022AY024NV—Mahogany Savanna

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent
 Classification: Loamy-skeletal, mixed, superactive Aquic Haplocryolls
 Slope: 4 to 15 percent
 Landform: Stream terraces
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—creeping wildrye, Woods' rose, willow, Kentucky bluegrass
 Ecological site: R022AY015NV—Streambank

Aspocket and similar soils

Composition: 0 to 1 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent
 Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls
 Slope: 4 to 15 percent
 Landform: Dissected plains
 Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs
 Ecological site: R022AY017NV—Semi-wet meadow

Fishsnooze and similar soils

Composition: 0 to 1 percent
 Slope: 15 to 50 percent, northeast aspect
 Landform: Northeast facing mountains
 Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs
 Ecological site: F022AY126NV

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Typic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 4 to 15 percent

Landform: Flood plains

Typical vegetation: Sedge, slender wheatgrass,
bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

ManagementFor information about managing this map unit, see the
following sections and associated tables in this
publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

580—Murain-Shorthike association**Map Unit Setting**

MLRA: 22A

Landscape: Mountain valleys or canyons

Elevation: 7,000 to 8,000

Precipitation: 18 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

CompositionMurain very gravelly coarse sandy loam, 4 to 30 percent
slopes—50 percentShorthike very gravelly loamy coarse sand, 30 to 50
percent slopes—20 percentMurain very gravelly coarse sandy loam, 15 to 50
percent slopes—15 percentMurain extremely stony coarse sandy loam, 8 to 30
percent slopes—3 percentAspetill very gravelly sandy loam, 15 to 50 percent
slopes—2 percentCloudburst extremely bouldery coarse sandy loam, 4 to
30 percent slopes—2 percentCumulic Cryaquolls very fine sandy loam, 4 to 15
percent slopes—2 percentAquic Haplocryolls very gravelly sandy loam, 4 to 15
percent slopes—1 percentLoope very gravelly sandy loam, 15 to 50 percent
slopes—1 percentHeenlake very stony sandy loam, 15 to 50 percent
slopes—1 percentGerdog very gravelly sandy loam, 4 to 30 percent
slopes—1 percentPachic Haplocryolls very gravelly ashy sandy loam, 8 to
30 percent slopes—1 percentJoenchris gravelly ashy sandy loam, 4 to 15 percent
slopes—1 percent**Component Description****Murain and similar soils**

Landform: Moraines

Slope: 4 to 30 percent

Parent material: Till derived from igneous and
metamorphic rockTypical vegetation: Western needlegrass, other
perennial forbs, mountain big sagebrush, antelope
bitterbrush**Typical profile:**Surface rock fragments: About 30 percent subrounded
gravel, 5 percent subrounded boulders, 5 percent
subrounded cobbles, 10 percent subrounded stones

Layer 1—0 to 2 inches; very gravelly coarse sandy loam

Layer 2—2 to 7 inches; extremely cobbly coarse sandy
loamLayer 3—7 to 18 inches; extremely cobbly coarse sandy
loamLayer 4—18 to 26 inches; extremely stony sandy clay
loamLayer 5—26 to 41 inches; extremely stony sandy clay
loam

Layer 6—41 to 60 inches; extremely cobbly sandy loam

See "Chemical Properties of Soils" table and the
"Physical Properties of Soils" table for more
information.**Component Properties and Qualities**

Runoff: Low

Saturated hydraulic conductivity class (root zone): High,
(Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY044NV—Coarse loamy 16-20
P.Z.**Component Description****Shorthike and similar soils**

Landform: South facing moraines

Slope: 30 to 50 percent, south aspect

Parent material: Till derived from mixed rock sources

Typical vegetation: Needlegrass, Indian ricegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 5 percent subrounded cobbles, 5 percent subrounded stones, 5 percent

subrounded boulders, 35 percent subrounded gravel

Layer 1—0 to 2 inches; very gravelly loamy coarse sand

Layer 2—2 to 10 inches; very gravelly coarse sandy loam

Layer 3—10 to 30 inches; extremely gravelly coarse sandy loam

Layer 4—30 to 60 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY043NV—South slope 14-16 P.Z.

Component Description

Murain moist and similar soils

Landform: Moraines

Slope: 15 to 50 percent

Parent material: Till derived from igneous and metamorphic rock

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 5 percent subrounded cobbles, 10 percent subrounded stones, 5 percent subrounded boulders

Layer 1—0 to 2 inches; very gravelly coarse sandy loam

Layer 2—2 to 7 inches; extremely cobbly coarse sandy loam

Layer 3—7 to 18 inches; extremely cobbly coarse sandy loam

Layer 4—18 to 26 inches; extremely stony sandy clay loam

Layer 5—26 to 41 inches; extremely stony sandy clay loam

Layer 6—41 to 60 inches; extremely cobbly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Murain and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Aspetill and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Moraines

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Cloudburst and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
Ecological site: F022AY116NV

Cumulic Cryaquolls and similar soils

Composition: 0 to 2 percent
Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls
Slope: 4 to 15 percent
Landform: Dissected plains
Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs
Ecological site: R022AY017NV—Semi-wet meadow

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent
Classification: Loamy-skeletal, mixed, superactive Aquic Haplocryolls
Slope: 4 to 15 percent
Landform: Stream terraces
Typical vegetation: Forest canopy—quaking aspen Forest understory—creeping wildrye, Woods' rose, willow, Kentucky bluegrass
Ecological site: R022AY015NV—Streambank

Gerdog and similar soils

Composition: 0 to 1 percent
Slope: 4 to 30 percent
Landform: Shoulders of mountains
Typical vegetation: Needlegrass, Thurber's needlegrass, mountain brome, bluegrass, other perennial forbs, low sagebrush, antelope bitterbrush
Ecological site: R022AY028NV—Claypan 16+ P.Z.

Heenlake and similar soils

Composition: 0 to 1 percent
Slope: 15 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush
Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Joenchris and similar soils

Composition: 0 to 1 percent
Slope: 4 to 15 percent
Landform: Fan remnants

Typical vegetation: Western needlegrass, pine needlegrass, Thurber's needlegrass, other perennial forbs, low sagebrush
Ecological site: R022AY049NV—Claypan 14-16 P.Z.

Loope and similar soils

Composition: 0 to 1 percent
Slope: 15 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush
Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Pachic Haplocryolls and similar soils

Composition: 0 to 1 percent
Classification: Loamy-skeletal, mixed, superactive Pachic Haplocryolls
Slope: 8 to 30 percent
Landform: Moraines
Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany
Ecological site: R022AY024NV—Mahogany Savanna

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
"Range" section
"Forest land" section
"Engineering" and "Soil Properties" sections

581—Murn association

Map Unit Setting

MLRA: 22A
Landscape: Mountain valleys or canyons
Elevation: 7,000 to 8,000
Precipitation: 18 to 24 inches
Air temperature: 39 to 45 degrees Fahrenheit
Frost-free period: 50 to 70 days

Composition

Murn very gravelly coarse sandy loam, 4 to 30 percent slopes—45 percent
Murn extremely stony coarse sandy loam, 8 to 30 percent slopes—40 percent

Murain very gravelly coarse sandy loam, 30 to 50 percent slopes—3 percent
 Aspetill very gravelly sandy loam, 4 to 30 percent slopes—2 percent
 Shorthike very gravelly loamy coarse sand, 15 to 50 percent slopes—2 percent
 Cloudburst extremely bouldery coarse sandy loam, 4 to 30 percent slopes—2 percent
 Chrisflat very gravelly coarse sandy loam, 4 to 15 percent slopes—2 percent
 Loope very gravelly sandy loam, 15 to 50 percent slopes—1 percent
 Cumulic Cryaquolls very fine sandy loam, 4 to 15 percent slopes—1 percent
 Pachic Haplocryolls very gravelly ashy sandy loam, 8 to 30 percent slopes—1 percent
 Heenlake very stony sandy loam, 15 to 50 percent slopes—1 percent

Component Description

Murain and similar soils

Landform: Moraines
 Slope: 4 to 30 percent
 Parent material: Till derived from igneous and metamorphic rock
 Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 35 percent subrounded gravel, 2 percent subrounded boulders, 2 percent subrounded cobbles, 2 percent subrounded stones
 Layer 1—0 to 2 inches; very gravelly coarse sandy loam
 Layer 2—2 to 7 inches; extremely cobbly coarse sandy loam
 Layer 3—7 to 18 inches; extremely cobbly coarse sandy loam
 Layer 4—18 to 26 inches; extremely stony sandy clay loam
 Layer 5—26 to 41 inches; extremely stony sandy clay loam
 Layer 6—41 to 60 inches; extremely cobbly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 6 inches

Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Component Description

Murain and similar soils

Landform: Moraines
 Slope: 8 to 30 percent
 Parent material: Till derived from igneous and metamorphic rock
 Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 3 percent subrounded boulders, 10 percent subrounded cobbles, 6 percent subrounded stones
 Layer 1—0 to 2 inches; extremely stony coarse sandy loam
 Layer 2—2 to 7 inches; extremely cobbly coarse sandy loam
 Layer 3—7 to 18 inches; extremely cobbly coarse sandy loam
 Layer 4—18 to 26 inches; extremely stony sandy clay loam
 Layer 5—26 to 41 inches; extremely stony sandy clay loam
 Layer 6—41 to 60 inches; extremely cobbly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 6 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Murain moist and similar soils

Composition: 0 to 3 percent

Slope: 30 to 50 percent

Landform: Moraines

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Aspetill and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—quaking aspen
Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Chrisflat and similar soils

Composition: 0 to 2 percent

Slope: 4 to 15 percent

Landform: Fan remnants

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Cloudburst and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Shorthike and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent, south aspect

Landform: South facing moraines

Typical vegetation: Needlegrass, Indian ricegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY043NV—South slope 14-16 P.Z.

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive

Cumulic Cryaquolls

Slope: 4 to 15 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Heenlake and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Loope and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Pachic Haplocryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive

Pachic Haplocryolls

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

590—Loope-Heenlake-Carshal association***Map Unit Setting***

MLRA: 22A

Landscape: Mountains

Elevation: 6,500 to 8,000

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 50 to 70 days

Composition

Loope very gravelly sandy loam, 15 to 50 percent slopes—40 percent

Heenlake very stony sandy loam, 15 to 50 percent slopes—30 percent

Carshal very gravelly sandy loam, 30 to 75 percent slopes—15 percent

Celeridge extremely bouldery sandy loam, 8 to 30 percent slopes—3 percent

Murnain very gravelly coarse sandy loam, 4 to 30 percent slopes—2 percent

Aspocket gravelly sandy loam, 8 to 30 percent slopes—2 percent

Joecut very gravelly sandy loam, dry, 15 to 50 percent slopes—2 percent

Rock outcrop—2 percent

Dogbed very gravelly sandy loam, 15 to 50 percent slopes—2 percent

Gerdog very gravelly sandy loam, 4 to 30 percent slopes—1 percent

Cumulic Cryaquolls very fine sandy loam, 4 to 15 percent slopes—1 percent

Component Description**Heenlake and similar soils**

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent gravel, 2 percent stones, 5 percent cobbles

Layer 1—0 to 1 inch; very gravelly sandy loam

Layer 2—1 to 14 inches; extremely gravelly sandy clay loam

Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Component Description**Heenlake and similar soils**

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 15 percent gravel, 15 percent cobbles, 9 percent stones, 5 percent boulders

Layer 1—0 to 6 inches; very stony sandy loam

Layer 2—6 to 18 inches; very gravelly clay loam

Layer 3—18 to 22 inches; very gravelly clay loam

Layer 4—22 to 32 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 4 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Component Description

Carshal and similar soils

Landform: Backslopes of mountains
 Slope: 30 to 75 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Indian ricegrass, Thurber's needlegrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, other shrubs, other trees, other perennial grasses

Typical profile:

Surface rock fragments: About 25 percent gravel, 2 percent stones, 5 percent cobbles
 Layer 1—0 to 2 inches; very gravelly sandy loam
 Layer 2—2 to 5 inches; gravelly loam
 Layer 3—5 to 14 inches; bedrock
 Layer 4—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (paralithic): 4 to 10 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 0.5 inch

Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: R022AY041NV—Eroded slope 14-20 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Celeridge and similar soils

Composition: 0 to 3 percent
 Slope: 8 to 30 percent
 Landform: Shoulders of mountains
 Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany
 Ecological site: R022AY024NV—Mahogany Savanna

Aspocket and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Dogbed and similar soils

Composition: 0 to 2 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush
 Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Joecut and similar soils

Composition: 0 to 2 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
 Ecological site: F022AY116NV

Murain and similar soils

Composition: 0 to 2 percent
 Slope: 4 to 30 percent
 Landform: Moraines
 Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush
 Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Rock outcrop

Composition: 0 to 2 percent
 Landform: Mountains
 Ecological site: None

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse loamy, mixed, superactive

Cumulic Cryaquolls

Slope: 4 to 15 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Gerdog and similar soils

Composition: 0 to 1 percent

Slope: 4 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Needlegrass, Thurber's needlegrass, mountain brome, bluegrass, other perennial forbs, low sagebrush, antelope bitterbrush

Ecological site: R022AY028NV—Claypan 16+ P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

591—Loope-Heenlake-Celeridge association**Map Unit Setting**

MLRA: 22A

Landscape: Mountains

Elevation: 6,200 to 8,000

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Loope very gravelly sandy loam, 8 to 30 percent slopes—40 percent

Heenlake very stony sandy loam, 8 to 30 percent slopes—30 percent

Celeridge extremely bouldery sandy loam, 8 to 30 percent slopes—15 percent

Joecut very gravelly sandy loam, dry, 15 to 50 percent slopes—3 percent

Aspocket gravelly sandy loam, 4 to 30 percent slopes—2 percent

Rock outcrop—2 percent

Carshal very gravelly sandy loam, 30 to 75 percent slopes—2 percent

Dogbed very gravelly sandy loam, 15 to 50 percent slopes—2 percent

Cumulic Cryaquolls very fine sandy loam, 4 to 15 percent slopes—1 percent

Gerdog very gravelly sandy loam, 4 to 30 percent slopes—1 percent

Murain very gravelly coarse sandy loam, 4 to 30 percent slopes—1 percent

Pinew very gravelly sandy loam, 15 to 50 percent slopes—1 percent

Component Description**Loope and similar soils**

Landform: Backslopes of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent gravel, 2 percent stones, 5 percent cobbles

Layer 1—0 to 1 inch; very gravelly sandy loam

Layer 2—1 to 14 inches; extremely gravelly sandy clay loam

Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Component Description**Heenlake and similar soils**

Landform: Backslopes of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 15 percent gravel, 15 percent cobbles, 9 percent stones, 5 percent boulders

Layer 1—0 to 6 inches; very stony sandy loam

Layer 2—6 to 18 inches; very gravelly clay loam

Layer 3—18 to 22 inches; very gravelly clay loam

Layer 4—22 to 32 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Component Description

Celeridge and similar soils

Landform: Shoulders of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Typical profile:

Surface rock fragments: About 20 percent boulders, 15 percent gravel, 10 percent cobbles, 10 percent stones

Layer 1—0 to 3 inches; extremely bouldery sandy loam

Layer 2—3 to 8 inches; extremely gravelly sandy loam

Layer 3—8 to 19 inches; extremely gravelly sandy clay loam

Layer 4—19 to 29 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY024NV—Mahogany Savanna

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Joecut and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Aspocket and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Carshal and similar soils

Composition: 0 to 2 percent

Slope: 30 to 75 percent

Landform: Backslopes of mountains

Typical vegetation: Indian ricegrass, Thurber's needlegrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, other shrubs, other trees, other perennial grasses

Ecological site: R022AY041NV—Eroded slope 14-20 P.Z.

Dogbed and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush

Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Rock outcrop

Composition: 0 to 2 percent

Landform: Mountains

Ecological site: None

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls

Slope: 4 to 15 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Gerdog and similar soils

Composition: 0 to 1 percent

Slope: 4 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Needlegrass, Thurber's needlegrass, mountain brome, bluegrass, other perennial forbs, low sagebrush, antelope bitterbrush

Ecological site: R022AY028NV—Claypan 16+ P.Z.

Murain and similar soils

Composition: 0 to 1 percent

Slope: 4 to 30 percent

Landform: Moraines

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Pinew and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush

Ecological site: F026XY044NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

592—Loope-Pinew-Heenlake association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 6,500 to 8,000

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Loope very gravelly sandy loam, 15 to 50 percent slopes—30 percent

Pinew very gravelly sandy loam, 15 to 50 percent slopes—30 percent

Heenlake very stony sandy loam, 15 to 50 percent slopes—25 percent

Gerdog very gravelly sandy loam, 4 to 30 percent slopes—4 percent

Carshal very gravelly sandy loam, 30 to 75 percent slopes—3 percent

Aridic Argixerolls very stony loam, 30 to 75 percent slopes—3 percent

Joecut very gravelly sandy loam, dry, 15 to 50 percent slopes—2 percent

Celeridge extremely bouldery sandy loam, 8 to 30 percent slopes—2 percent

Rock outcrop—1 percent

Component Description

Loope and similar soils

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent gravel, 2 percent stones, 5 percent cobbles
 Layer 1—0 to 1 inch; very gravelly sandy loam
 Layer 2—1 to 14 inches; extremely gravelly sandy clay loam
 Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 1.4 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Component Description

Pinew and similar soils

Landform: Backslopes of mountains.
 Slope: 15 to 50 percent.
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia.
 Typical vegetation: Forest canopy—singleleaf pinyon
 Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush.
 Site index: Singleleaf pinyon—75 at an age base of 0 years.

Typical profile:

Surface rock fragments: About 25 percent gravel, 9 percent stones, 5 percent cobbles
 Layer 1—0 to 3 inches; very gravelly sandy loam
 Layer 2—3 to 8 inches; very gravelly sandy clay loam
 Layer 3—8 to 15 inches; very gravelly clay loam
 Layer 4—15 to 25 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F026XY044NV

Component Description

Heenlake and similar soils

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 15 percent gravel, 15 percent cobbles, 9 percent stones, 5 percent boulders
 Layer 1—0 to 6 inches; very stony sandy loam
 Layer 2—6 to 18 inches; very gravelly clay loam
 Layer 3—18 to 22 inches; very gravelly clay loam
 Layer 4—22 to 32 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Gerdog and similar soils

Composition: 0 to 4 percent

Slope: 4 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Needlegrass, Thurber's needlegrass, mountain brome, bluegrass, other perennial forbs, low sagebrush, antelope bitterbrush

Ecological site: R022AY028NV—Claypan 16+ P.Z.

Aridic Argixerolls and similar soils

Composition: 0 to 3 percent

Classification: Loamy-skeletal, mixed, superactive, frigid, shallow Aridic Argixerolls

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Forest canopy—singleleaf pinyon
Forest understory—mountain big sagebrush, antelope bitterbrush

Ecological site: F026XY104NV

Carshal and similar soils

Composition: 0 to 3 percent

Slope: 30 to 75 percent

Landform: Backslopes of mountains

Typical vegetation: Indian ricegrass, Thurber's needlegrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, other shrubs, other trees, other perennial grasses

Ecological site: R022AY041NV—Eroded slope 14-20 P.Z.

Celeridge and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Joecut and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant

Ecological site: F022AY116NV

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

600—Snowtell-Sonorapass-Rock outcrop complex, 8 to 30 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 10,000

Precipitation: 30 to 40 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Snowtell very gravelly coarse sandy loam, 8 to 30 percent slopes—45 percent

Sonorapass very gravelly coarse sandy loam, 8 to 30 percent slopes—25 percent

Rock outcrop—15 percent

Stumpatil very gravelly coarse sandy loam, dry, 8 to 30 percent slopes—7 percent

Typic Cryaquolls very gravelly sandy loam, 4 to 15 percent slopes—2 percent

Cumulic Cryaquolls very fine sandy loam, 2 to 8 percent slopes—2 percent

Lostcannon very gravelly coarse sandy loam, 4 to 30 percent slopes—2 percent

Dunderberg very gravelly ashy sandy loam, warm, 8 to 30 percent slopes—2 percent

Component Description**Snowtell and similar soils**

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Till from mixed rock sources

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain
big sagebrush, currant, snowberry

Site index: Lodgepole pine—20

Typical profile:

Surface rock fragments: 35 percent subrounded gravel,
5 percent subrounded cobbles, 5 percent subrounded
stones, 5 percent subrounded boulders

Layer 1—0 to 3 inches; very gravelly coarse sandy loam

Layer 2—3 to 10 inches; very gravelly coarse sandy
loam

Layer 3—10 to 20 inches; bedrock

See "Chemical Properties of Soils" table and the
"Physical Properties of Soils" table for more
information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 4 to 10
inches

Saturated hydraulic conductivity class (root zone): High,
(Permeability class: Moderately rapid)

Available water capacity: About 0.8 inch

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: F022AY127NV

Component Description**Sonorapass and similar soils**

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Till from mixed rock sources

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain
big sagebrush, currant, snowberry

Site index: Lodgepole pine—40

Typical profile:

Surface rock fragments: About 25 percent subrounded
gravel, 5 percent subrounded stones, 5 percent
subrounded boulders, 5 percent subrounded cobbles

Layer 1—0 to 8 inches; very gravelly coarse sandy loam

Layer 2—8 to 17 inches; extremely cobbly coarse sandy
loam

Layer 3—17 to 21 inches; extremely gravelly coarse
sandy loam

Layer 4—21 to 31 inches; bedrock

See "Chemical Properties of Soils" table and the
"Physical Properties of Soils" table for more
information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 20 to 40
inches

Saturated hydraulic conductivity class (root zone): High,
(Permeability class: Moderately rapid)

Available water capacity: About 1.4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F022AY127NV

Component Description**Rock outcrop**

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in
characteristics are in the "Classification of the Soils"
section.

Contrasting Inclusions**Stumpatil and similar soils**

Composition: 0 to 7 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain
big sagebrush, currant, snowberry

Ecological site: F022AY127NV

Cumulic Cryaquolls and similar soils

Composition: 0 to 2 percent

Classification: Coarse-loamy, mixed, superactive
Cumulic Cryaquolls

Slope: 2 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Dunderberg and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Moraines

Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY021NV—South slope 30+ P.Z.

Lostcannon and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen
Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Typic Cryaquolls and similar soils

Composition: 0 to 2 percent

Classification: Sandy-skeletal, mixed Typic Cryaquolls

Slope: 4 to 15 percent

Landform: Flood plains

Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

610—Forsell-Snowtell-Rock outcrop complex, 8 to 30 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 9,500

Precipitation: 30 to 40 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Forsell very gravelly peaty coarse sandy loam, 8 to 30 percent slopes—50 percent

Snowtell very gravelly coarse sandy loam, 8 to 30 percent slopes—25 percent

Rock outcrop—10 percent

Sofgran gravelly loamy coarse sand, dry, 2 to 15 percent slopes—6 percent

Forsell very gravelly peaty coarse sandy loam, moist, 15 to 30 percent slopes—2 percent

Forsell very gravelly peaty coarse sandy loam, cool, 15 to 50 percent slopes—2 percent

Aspetill very gravelly sandy loam, 8 to 30 percent slopes—2 percent

Aquic Haplocryolls very gravelly sandy loam, 0 to 8 percent slopes—1 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent

Waterpeak gravelly loamy coarse sand, cool, 8 to 30 percent slopes—1 percent

Component Description

Forsell and similar soils

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Till derived from mixed rock sources

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry

Site index: Lodgepole pine—40

Typical profile:

Surface rock fragments: About 40 percent subrounded gravel, 15 percent subrounded cobbles, 10 percent subrounded stones, 4 percent subrounded boulders

Layer 1—0 to 1 inch; very gravelly peaty coarse sandy loam

Layer 2—1 to 11 inches; very gravelly coarse sandy loam

Layer 3—11 to 27 inches; extremely stony sandy loam

Layer 4—27 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Depth to restrictive feature: Bedrock (lithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone): High,
 (Permeability class: Moderately rapid)
 Available water capacity: About 5 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F022AY127NV

Component Description

Snowtell and similar soils

Landform: Mountains
 Slope: 8 to 30 percent
 Parent material: Till derived from mixed rock sources
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain
 big sagebrush, currant, snowberry
 Site index: Lodgepole pine—20

Typical profile:

Surface rock fragments: About 35 percent subrounded
 gravel, 5 percent subrounded cobbles, 5 percent
 subrounded stones, 5 percent subrounded boulders
 Layer 1—0 to 3 inches; very gravelly coarse sandy loam
 Layer 2—3 to 10 inches; very gravelly coarse sandy
 loam
 Layer 3—10 to 20 inches; bedrock

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 4 to 10
 inches
 Saturated hydraulic conductivity class (root zone): High,
 (Permeability class: Moderately rapid)
 Available water capacity: About 0.8 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: F022AY127NV

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in
 characteristics are in the "Classification of the Soils"
 section.

Contrasting Inclusions

Sofgran dry and similar soils

Composition: 0 to 6 percent
 Slope: 2 to 15 percent
 Landform: Footslopes of mountains
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain
 big sagebrush, currant, snowberry
 Ecological site: F022AY127NV

Aspetill and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Moraines
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender
 wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Forsell moist and similar soils

Forsell cool and similar soils
 Composition: 0 to 2 percent
 Slope: 15 to 50 percent, north aspect
 Landform: North facing mountains
 Typical vegetation: Forest canopy—mountain hemlock
 Forest understory—other perennial forbs
 Ecological site: F022AY114NV

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent
 Classification: Loamy-skeletal, mixed, superactive Aquic
 Haplocryolls
 Slope: 0 to 8 percent
 Landform: Stream terraces
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—creeping wildrye, Woods' rose,
 willow, Kentucky bluegrass
 Ecological site: R022AY015NV—Streambank

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent
 Classification: Coarse-loamy, mixed, superactive
 Cumulic Cryaquolls
 Slope: 0 to 8 percent
 Landform: Dissected plains

Typical vegetation: Bluegrass, creeping bentgrass, sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses
Ecological site: R022AY017NV—Semi-wet meadow

Waterpeak and similar soils

Composition: 0 to 1 percent
Slope: 8 to 30 percent
Landform: Footslopes of mountains
Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome
Ecological site: R022AY010NV—Mountain shoulders 30+ P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
"Range" section
"Forest land" section
"Engineering" and "Soil Properties" sections

611—Forsell-Snowtell-Rock outcrop complex, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22A
Landscape: Mountains
Elevation: 8,000 to 9,500
Precipitation: 30 to 40 inches
Air temperature: 36 to 39 degrees Fahrenheit
Frost-free period: 30 to 60 days

Composition

Forsell very gravelly peaty coarse sandy loam, 30 to 50 percent slopes—50 percent
Snowtell very gravelly coarse sandy loam, 30 to 50 percent slopes—25 percent
Rock outcrop—10 percent
Sonorapass very gravelly coarse sandy loam, 15 to 50 percent slopes—4 percent
Aspetill very gravelly sandy loam, 8 to 30 percent slopes—2 percent
Forsell very gravelly peaty coarse sandy loam, cool, 15 to 50 percent slopes—2 percent
Forsell very gravelly peaty coarse sandy loam, moist, 15 to 50 percent slopes—2 percent
Sofgran gravelly loamy coarse sand, dry, 4 to 15 percent slopes—1 percent
Aquic Haplocryolls very gravelly sandy loam, 0 to 8 percent slopes—1 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent
Waterpeak gravelly loamy coarse sand, cool, 15 to 50 percent slopes—1 percent
Lostcannon very gravelly coarse sandy loam, 8 to 50 percent slopes—1 percent

Component Description

Forsell and similar soils

Landform: Mountains
Slope: 30 to 50 percent
Parent material: Till derived from mixed rock sources
Typical vegetation: Forest canopy—lodgepole pine
Forest understory—snowberry, currant, mountain big sagebrush, other perennial forbs
Site index: Lodgepole pine—40

Typical profile:

Surface rock fragments: About 4 percent subrounded boulders, 40 percent subrounded gravel, 10 percent subrounded stones, 15 percent subrounded cobbles
Layer 1—0 to 1 inch; very gravelly peaty coarse sandy loam
Layer 2—1 to 11 inches; very gravelly coarse sandy loam
Layer 3—11 to 27 inches; extremely stony sandy loam
Layer 4—27 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
Depth to restrictive feature: Bedrock (lithic): 60 to 80 inches
Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
Available water capacity: About 5 inches
Present flooding: None
Present ponding: None
Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
Ecological site: F022AY127NV

Component Description

Snowtell and similar soils

Landform: Mountains
Slope: 30 to 50 percent
Parent material: Till derived from mixed rock sources

Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—currant, other perennial forbs,
 mountain big sagebrush, snowberry
 Site index: Lodgepole pine—20

Typical profile:

Surface rock fragments: About 5 percent subrounded
 boulders, 5 percent subrounded stones, 35 percent
 subrounded gravel, 5 percent subrounded cobbles
 Layer 1—0 to 3 inches; very gravelly coarse sandy loam
 Layer 2—3 to 10 inches; very gravelly coarse sandy
 loam
 Layer 3—10 to 20 inches; bedrock

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 4 to 10
 inches
 Saturated hydraulic conductivity class (root zone): High,
 (Permeability class: Moderately rapid)
 Available water capacity: About 0.8 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: F022AY127NV

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in
 characteristics are in the "Classification of the Soils"
 section.

Contrasting Inclusions

Sonorapass and similar soils

Composition: 0 to 4 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain
 big sagebrush, currant, snowberry
 Ecological site: F022AY127NV

Aspetill and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Moraines
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender
 wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Forsell cool and similar soils

Forsell moist and similar soils
 Composition: 0 to 2 percent
 Slope: 15 to 50 percent, north aspect
 Landform: North facing mountains
 Typical vegetation: Forest canopy—mountain hemlock
 Forest understory—western needlegrass, mountain
 big sagebrush, mountain brome, lupine, currant, wild
 mint, snowberry
 Ecological site: F022AY118NV

Aquic Haplocryolls and similar soils

Composition: 0 to 1 percent
 Classification: Loamy-skeletal, mixed, superactive Aquic
 Haplocryolls
 Slope: 0 to 8 percent
 Landform: Stream terraces
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—creeping wildrye, Woods' rose,
 willow, Kentucky bluegrass
 Ecological site: R022AY015NV—Streambank

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent
 Classification: Coarse-loamy, mixed, superactive
 Cumulic Cryaquolls
 Slope: 0 to 8 percent
 Landform: Dissected plains
 Typical vegetation: Creeping bentgrass, sedge, tufted
 hairgrass, Baltic rush, bluegrass, other perennial
 grasses, other perennial forbs
 Ecological site: R022AY017NV—Semi-wet meadow

Lostcannon and similar soils

Composition: 0 to 1 percent
 Slope: 8 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender
 wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Sofgran dry and similar soils

Composition: 0 to 1 percent

Slope: 4 to 15 percent

Landform: Footslopes of mountains

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry

Ecological site: F022AY127NV

Waterpeak and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Footslopes of mountains

Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome

Ecological site: R022AY010NV—Mountain shoulders 30+ P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

620—Indian Creek very gravelly sandy loam, 2 to 8 percent slopes

Map Unit Setting

MLRA: 26

Landscape: Semi-bolson

Elevation: 5,300 to 5,600

Precipitation: 8 to 12 inches

Air temperature: 48 to 52 degrees Fahrenheit

Frost-free period: 80 to 100 days

Composition

Indian Creek very gravelly sandy loam, 2 to 8 percent slopes—90 percent

Holbrook gravelly fine sandy loam, 2 to 8 percent slopes—5 percent

Vertic Palexerolls gravelly sandy loam, 4 to 15 percent slopes—5 percent

Component Description

Indian Creek and similar soils

Landform: Summits of fan remnants

Slope: 2 to 8 percent

Parent material: Alluvium from mixed rock sources

Typical vegetation: Indian ricegrass, Thurber needlegrass, Sandberg bluegrass, other perennial forbs, low sagebrush

Typical profile:

Surface rock fragments: About 40 percent gravel, 2 percent cobbles

Layer 1—0 to 1 inch; very gravelly sandy loam

Layer 2—1 to 3 inches; gravelly loam

Layer 3—3 to 20 inches; gravelly clay

Layer 4—20 to 25 inches; cemented material

Layer 5—25 to 60 inches; stratified extremely gravelly loamy coarse sand to gravelly sandy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Duripan: 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Low, (Permeability class: Very slow)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R026XY025NV—Claypan 8-10 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Holbrook and similar soils

Composition: 0 to 5 percent

Slope: 2 to 8 percent

Landform: Alluvial fans

Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, bluegrass, other perennial forbs, antelope bitterbrush

Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Vertic Palexerolls and similar soils

Composition: 0 to 5 percent

Classification: Fine, smectitic, mesic Vertic Palexerolls

Slope: 4 to 15 percent

Landform: Fan remnants

Typical vegetation: Thurber needlegrass, low sagebrush, bluegrass, other perennial forbs, antelope bitterbrush

Ecological site: R026XY023NV—Claypan 10-14 P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section
 "Crops and Pasture" section
 "Engineering" and "Soil Properties" sections

630—Olac-Flex-Duco association**Map Unit Setting**

MLRA: 26
 Landscape: Mountains
 Elevation: 5,600 to 6,200
 Precipitation: 10 to 12 inches
 Air temperature: 45 to 48 degrees Fahrenheit
 Frost-free period: 80 to 90 days

Composition

Olac very gravelly sandy loam, 15 to 50 percent slopes—40 percent
 Flex very gravelly sandy loam, 30 to 50 percent slopes—25 percent
 Duco very gravelly sandy loam, 30 to 50 percent slopes—20 percent
 Koontz very gravelly sandy loam, 15 to 50 percent slopes—5 percent
 Kram very gravelly very fine sandy loam, 30 to 75 percent slopes—4 percent
 Indian Creek very gravelly sandy loam, 4 to 15 percent slopes—2 percent
 Lithic Xeric Torriorthents very stony loam, 30 to 75 percent slopes—2 percent
 Aridic Haploxerolls very cobbly sandy loam, 4 to 15 percent slopes—1 percent
 Rock outcrop—1 percent

Component Description**Olac and similar soils**

Landform: Mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Indian ricegrass, Thurber needlegrass, Sandberg bluegrass, other perennial forbs, low sagebrush

Typical profile:

Surface rock fragments: About 40 percent gravel, 3 percent cobbles, 2 percent stones
 Layer 1—0 to 3 inches; very gravelly sandy loam

Layer 2—3 to 10 inches; extremely gravelly loam
 Layer 3—10 to 20 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 8 to 14 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 0.7 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: R026XY025NV—Claypan 8-10 P.Z.

Component Description**Flex and similar soils**

Landform: Mountains
 Slope: 30 to 50 percent
 Parent material: Residuum derived from altered volcanic rocks
 Typical vegetation: Other perennial forbs, Indian ricegrass, desert needlegrass, Wyoming big sagebrush, green ephedra

Typical profile:

Surface rock fragments: About 40 percent gravel, 3 percent cobbles, 2 percent stones
 Layer 1—0 to 2 inches; very gravelly sandy loam
 Layer 2—2 to 10 inches; very gravelly sandy clay loam
 Layer 3—10 to 20 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (paralithic): 6 to 12 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 0.9 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: R026XY011NV—South slope 8-12 P.Z.

Component Description**Duco and similar soils**

Landform: Mountains

Slope: 30 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Forest canopy—singleleaf pinyon
Forest understory—needlegrass, muttongrass,
mountain big sagebrush, currant, snowberry,
antelope bitterbrush

Site index: Singleleaf pinyon—65 at an age base of 0 years

Typical profile:

Surface rock fragments: About 5 percent stones, 5 percent cobbles, 15 percent gravel

Layer 1—0 to 3 inches; very gravelly sandy loam

Layer 2—3 to 5 inches; gravelly loam

Layer 3—5 to 18 inches; very gravelly clay loam

Layer 4—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F026XY044NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Koontz and similar soils**

Composition: 0 to 5 percent

Slope: 15 to 50 percent, south aspect

Landform: South facing mountains

Typical vegetation: Indian ricegrass, desert needlegrass,
Thurber needlegrass, other perennial forbs, mountain
big sagebrush, antelope bitterbrush

Ecological site: R026XY015NV—Shallow loam 10-12 P.Z.

Kram and similar soils

Composition: 0 to 4 percent

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Forest canopy—Utah juniper,
singleleaf pinyon Forest understory—Wyoming big
sagebrush, antelope bitterbrush

Ecological site: F026XY062NV

Indian Creek and similar soils

Composition: 0 to 2 percent

Slope: 4 to 15 percent

Landform: Summits of fan remnants

Typical vegetation: Indian ricegrass, Thurber
needlegrass, Sandberg bluegrass, other perennial
forbs, low sagebrush

Ecological site: R026XY025NV—Claypan 8-10 P.Z.

Lithic Xeric Torriorthents and similar soils

Composition: 0 to 2 percent

Classification: Loamy-skeletal, mixed, nonacid, mesic
Lithic Xeric Torriorthents

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Indian ricegrass, needlegrass,
Wyoming big sagebrush, other perennial forbs,
purple sage

Ecological site: R026XY029NV—Eroded slope 8-12 P.Z.

Aridic Haploxerolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive,
mesic Aridic Haploxerolls

Slope: 4 to 15 percent

Landform: Alluvial fans

Typical vegetation: Thurber needlegrass, big sagebrush,
basin wildrye, bluegrass, other perennial forbs,
antelope bitterbrush

Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section
"Forest land" section
"Engineering" and "Soil Properties" sections

640—Koontz-Nosrac association

Map Unit Setting

MLRA: 26
Landscape: Mountains
Elevation: 6,400 to 7,000
Precipitation: 12 to 14 inches
Air temperature: 46 to 50 degrees Fahrenheit
Frost-free period: 80 to 90 days

Composition

Koontz very gravelly sandy loam, 15 to 50 percent slopes—55 percent
Nosrac very gravelly sandy loam, 15 to 50 percent slopes—30 percent
Pinenut very stony sandy loam, 15 to 50 percent slopes—9 percent
Flex very gravelly sandy loam, 15 to 50 percent slopes—2 percent
Rock outcrop—2 percent
Vertic Palexerolls gravelly sandy loam, 4 to 30 percent slopes—2 percent

Component Description

Koontz and similar soils

Landform: South facing mountains
Slope: 15 to 50 percent, south aspect
Parent material: Colluvium derived from metavolcanic rocks over residuum derived from metavolcanic rocks
Typical vegetation: Indian ricegrass, desert needlegrass, Thurber needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 40 percent gravel, 3 percent cobbles, 2 percent stones
Layer 1—0 to 2 inches; very gravelly sandy loam
Layer 2—2 to 12 inches; very gravelly clay loam
Layer 3—12 to 22 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 8 to 20 inches
Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)
Available water capacity: About 1.1 inches
Present flooding: None
Present ponding: None
Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
Ecological site: R026XY015NV—Shallow loam 10-12 P.Z.

Component Description

Nosrac and similar soils

Landform: North facing mountains
Slope: 15 to 50 percent, north aspect
Parent material: Colluvium derived from metavolcanic rock over residuum derived from metavolcanic rock
Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, bluegrass, other perennial forbs, antelope bitterbrush

Typical profile:

Surface rock fragments: About 40 percent gravel, 3 percent cobbles, 2 percent stones
Layer 1—0 to 12 inches; very gravelly sandy loam
Layer 2—12 to 45 inches; very gravelly clay loam
Layer 3—45 to 60 inches; very gravelly loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches
Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)
Available water capacity: About 6 inches
Present flooding: None
Present ponding: None
Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Pinenut and similar soils

Composition: 0 to 9 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush

Ecological site: F026XY044NV

Flex and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Other perennial forbs, Indian ricegrass, desert needlegrass, Wyoming big sagebrush, green ephedra

Ecological site: R026XY011NV—South slope 8-12 P.Z.

Rock outcrop

Composition: 0 to 2 percent

Landform: Mountains

Ecological site: None

Vertic Palexerolls and similar soils

Composition: 0 to 2 percent

Classification: Fine, smectitic, mesic Vertic Palexerolls

Slope: 4 to 30 percent

Landform: Fan remnants

Typical vegetation: Thurber needlegrass, low sagebrush, bluegrass, other perennial forbs, antelope bitterbrush

Ecological site: R026XY023NV—Claypan 10-14 P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

650—Shree very gravelly sandy loam, 4 to 15 percent slopes

Map Unit Setting

MLRA: 26

Landscape: Mountain valleys or canyons

Elevation: 6,800 to 7,200

Precipitation: 12 to 14 inches

Air temperature: 46 to 50 degrees Fahrenheit

Frost-free period: 80 to 90 days

Composition

Shree very gravelly loam, 4 to 15 percent slopes—90 percent

Vertic Palexerolls gravelly sandy loam, 2 to 8 percent slopes—5 percent

Holbrook very gravelly loam, 2 to 8 percent slopes—4 percent

Fluventic Haploxerolls very cobbly sandy loam, 2 to 8 percent slopes—1 percent

Component Description

Shree and similar soils

Landform: Fan remnants

Slope: 4 to 15 percent

Parent material: Alluvium from mixed rock sources

Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, bluegrass, other perennial forbs, antelope bitterbrush

Typical profile:

Surface rock fragments: About 42 percent gravel, 2 percent cobbles, 2 percent stones, 6 percent fine gravel

Layer 1—0 to 14 inches; very gravelly loam

Layer 2—14 to 40 inches; extremely gravelly sandy clay loam

Layer 3—40 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 5 inches

Present flooding: Rare

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Vertic Palexerolls and similar soils**

Composition: 0 to 5 percent

Classification: Fine, smectitic, mesic Vertic Palexerolls

Slope: 2 to 8 percent

Landform: Fan remnants

Typical vegetation: Thurber needlegrass, low sagebrush, bluegrass, other perennial forbs, antelope bitterbrush

Ecological site: R026XY023NV—Claypan 10-14 P.Z.

Holbrook and similar soils

Composition: 0 to 4 percent

Slope: 2 to 8 percent

Landform: inset fans

Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, bluegrass, other perennial forbs, antelope bitterbrush

Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Fluventic Haploxerolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive, mesic Fluventic Haploxerolls

Slope: 2 to 8 percent

Landform: Stream terraces

Typical vegetation: Sedge, basin wildrye, creeping wildrye, Nevada bluegrass, Woods' rose, yellow willow, silver buffaloberry

Ecological site: R026XY073NV—Streambank

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Crops and Pasture" section

"Engineering" and "Soil Properties" sections

651—Shree-Holbrook association***Map Unit Setting***

MLRA: 26

Landscape: Mountain valleys or canyons

Elevation: 6,800 to 7,200

Precipitation: 12 to 14 inches

Air temperature: 46 to 50 degrees Fahrenheit

Frost-free period: 80 to 90 days

Composition

Shree very gravelly sandy loam, 2 to 8 percent slopes—50 percent

Holbrook very gravelly loam, 2 to 8 percent slopes—35 percent

Pachic Haploxerolls very gravelly loam, 2 to 8 percent slopes—9 percent

Lunder very gravelly sandy loam, 2 to 8 percent slopes—5 percent

Fluventic Haploxerolls very cobbly sandy loam, 2 to 8 percent slopes—1 percent

Component Description**Shree and similar soils**

Landform: Fan remnants

Slope: 2 to 8 percent

Parent material: Alluvium from mixed rock sources

Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, bluegrass, other perennial forbs, antelope bitterbrush

Typical profile:

Surface rock fragments: About 2 percent cobbles, 2 percent stones, 42 percent gravel, 6 percent fine gravel

Layer 1—0 to 14 inches; very gravelly sandy loam

Layer 2—14 to 40 inches; extremely gravelly sandy clay loam

Layer 3—40 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 5 inches

Present flooding: Rare

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Component Description**Holbrook and similar soils**

Landform: inset fans

Slope: 2 to 8 percent

Parent material: Alluvium from mixed rock sources

Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, bluegrass, other perennial forbs, antelope bitterbrush

Typical profile:

Surface rock fragments: About 6 percent fine gravel, 30 percent gravel, 11 percent cobbles, 6 percent stones
 Layer 1—0 to 8 inches; very gravelly loam
 Layer 2—8 to 60 inches; stratified stony sand to extremely gravelly loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 3 inches
 Present flooding: Rare
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Irrigated land capability: 4s
 Nonirrigated land capability: 6s
 Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Pachic Haploxerolls and similar soils**

Composition: 0 to 9 percent
 Classification: Loamy-skeletal, mixed, superactive, mesic Pachic Haploxerolls
 Slope: 2 to 8 percent
 Landform: inset fans
 Typical vegetation: Mountain big sagebrush, other perennial forbs, basin wildrye, muttongrass, antelope bitterbrush, needlegrass
 Ecological site: R026XY048NV—Loamy slope 12-14 P.Z.

Lunder and similar soils

Composition: 0 to 5 percent
 Slope: 2 to 8 percent
 Landform: Summits of fan remnants
 Typical vegetation: Thurber needlegrass, low sagebrush, bluegrass, other perennial forbs, antelope bitterbrush
 Ecological site: R026XY023NV—Claypan 10-14 P.Z.

Fluventic Haploxerolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive, mesic Fluventic Haploxerolls

Slope: 2 to 8 percent

Landform: Stream terraces

Typical vegetation: Sedge, basin wildrye, creeping wildrye, Nevada bluegrass, Woods' rose, yellow willow, silver buffaloberry

Ecological site: R026XY073NV—Streambank

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Crops and Pasture" section
 "Engineering" and "Soil Properties" sections

660—Delhew-Grandridge-Bakscratch association***Map Unit Setting***

MLRA: 22A
 Landscape: Mountains
 Elevation: 8,000 to 10,000
 Precipitation: 18 to 26 inches
 Air temperature: 38 to 42 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Delhew very gravelly loamy coarse sand, 15 to 50 percent slopes—35 percent
 Grandridge very gravelly coarse sandy loam, 4 to 30 percent slopes—30 percent
 Bakscratch very gravelly coarse sandy loam, 15 to 50 percent slopes—20 percent
 Elaero very gravelly loamy coarse sand, 30 to 75 percent slopes—7 percent
 Delhew very gravelly coarse sandy loam, cool, 15 to 50 percent slopes—6 percent
 Rock outcrop—2 percent

Component Description**Delhew and similar soils**

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from granodiorite
 Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, snowberry

Typical profile:

Surface rock fragments: About 22 percent fine gravel, 43 percent gravel, 2 percent cobbles, 2 percent stones

Layer 1—0 to 16 inches; very gravelly loamy coarse sand

Layer 2—16 to 27 inches; very gravelly coarse sandy loam

Layer 3—27 to 40 inches; extremely gravelly coarse sandy loam

Layer 4—40 to 60 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):

Moderately Low, (Permeability class: Very slow)

Available water capacity: About 4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY052NV—Gravelly slope 16+ P.Z.

Component Description**Grandridge and similar soils**

Landform: Mountains

Slope: 4 to 30 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Typical profile:

Surface rock fragments: About 70 percent gravel, 3 percent stones, 5 percent cobbles

Layer 1—0 to 1 inch; very gravelly coarse sandy loam

Layer 2—1 to 10 inches; very gravelly sandy clay loam

Layer 3—10 to 18 inches; very gravelly sandy clay loam

Layer 4—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Component Description**Bakscratch and similar soils**

Landform: Shoulders of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Typical profile:

Surface rock fragments: About 25 percent gravel, 15 percent cobbles, 25 percent stones

Layer 1—0 to 7 inches; very gravelly coarse sandy loam

Layer 2—7 to 11 inches; very gravelly coarse sandy loam

Layer 3—11 to 16 inches; very gravelly coarse sandy loam

Layer 4—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 1.3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY024NV—Mahogany Savanna

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Elaero and similar soils

Composition: 0 to 7 percent

Slope: 30 to 75 percent

Landform: Backslopes of mountains

Typical vegetation: Needlegrass, Indian ricegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY043NV—South slope 14-16 P.Z.

Delhew and similar soils

Composition: 0 to 6 percent

Slope: 15 to 50 percent, south aspect

Landform: South facing backslopes of mountains

Typical vegetation: Western needlegrass, spike fescue, other perennial forbs, mountain big sagebrush

Ecological site: R022AY045NV—Gravelly loamy slope 20-30 P.Z.

Rock outcrop

Composition: 0 to 2 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

670—Springmeyer gravelly sandy loam, 4 to 8 percent slopes

Map Unit Setting

MLRA: 26

Landscape: Mountain valleys or canyons

Elevation: 6,800 to 7,000

Precipitation: 12 to 14 inches

Air temperature: 45 to 48 degrees Fahrenheit

Frost-free period: 80 to 90 days

Composition

Springmeyer gravelly sandy loam, 4 to 8 percent slopes—85 percent

Vertic Palexerolls gravelly sandy loam, 2 to 8 percent slopes—5 percent

Shree very gravelly loam, 4 to 8 percent slopes—5 percent

Aridic Argixerolls gravelly sandy loam, 4 to 8 percent slopes—5 percent

Component Description

Springmeyer and similar soils

Landform: Fan remnants

Slope: 4 to 8 percent

Parent material: Alluvium from mixed rock sources

Typical vegetation: Antelope bitterbrush, Thurber needlegrass, big sagebrush, basin wildrye, bluegrass, other perennial forbs

Typical profile:

Surface rock fragments: About 20 percent subrounded gravel

Layer 1—0 to 2 inches; gravelly sandy loam

Layer 2—2 to 10 inches; gravelly sandy loam

Layer 3—10 to 32 inches; gravelly sandy clay loam

Layer 4—32 to 60 inches; stratified extremely gravelly loamy sand to sandy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 8 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6e

Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Aridic Argixerolls and similar soils

Composition: 0 to 5 percent

Classification: Fine-loamy, mixed, superactive, mesic

Aridic Argixerolls

Slope: 4 to 8 percent
 Landform: Fan remnants
 Typical vegetation: Western wheatgrass, basin wildrye,
 other perennial forbs, basin big sagebrush
 Ecological site: R026XY012NV—Dry floodplain 8-10
 P.Z.

Shree and similar soils

Composition: 0 to 5 percent
 Slope: 4 to 8 percent
 Landform: Fan remnants
 Typical vegetation: Thurber needlegrass, big sagebrush,
 basin wildrye, bluegrass, other perennial forbs,
 antelope bitterbrush
 Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Vertic Palexerolls and similar soils

Composition: 0 to 5 percent
 Classification: Fine, smectitic, mesic Vertic Palexerolls
 Slope: 2 to 8 percent
 Landform: Fan remnants
 Typical vegetation: Thurber needlegrass, low sagebrush,
 bluegrass, other perennial forbs, antelope bitterbrush
 Ecological site: R026XY023NV—Claypan 10-14 P.Z.

Management

For information about managing this map unit, see the
 following sections and associated tables in this
 publication:
 "Range" section
 "Engineering" and "Soil Properties" sections

671—Springmeyer-Cassiro association

Map Unit Setting

MLRA: 26
 Landscape: Mountain valleys or canyons
 Elevation: 5,200 to 5,400
 Precipitation: 10 to 14 inches
 Air temperature: 45 to 48 degrees Fahrenheit
 Frost-free period: 80 to 100 days

Composition

Springmeyer gravelly sandy loam, 2 to 8 percent
 slopes—50 percent
 Cassiro gravelly sandy loam, 2 to 8 percent slopes—35
 percent
 Oxyaquic Xerofluvents fine sandy loam, 0 to 2 percent
 slopes—4 percent
 Indiano gravelly fine sandy loam, 4 to 30 percent
 slopes—4 percent
 Aquic Xerofluvents gravelly loamy fine sand, 0 to 2
 percent slopes—3 percent

Kimmerling clay loam, 2 to 8 percent slopes—2 percent
 Fluvaquentic Haploxerolls very cobbly sandy loam, 0 to
 8 percent slopes—2 percent

Component Description

Springmeyer and similar soils

Landform: Fan remnants
 Slope: 2 to 8 percent
 Parent material: Alluvium from mixed rock sources
 Typical vegetation: Thurber needlegrass, big sagebrush,
 basin wildrye, bluegrass, other perennial forbs,
 antelope bitterbrush

Typical profile:

Surface rock fragments: About 20 percent subrounded
 gravel
 Layer 1—0 to 2 inches; gravelly sandy loam
 Layer 2—2 to 10 inches; gravelly sandy loam
 Layer 3—10 to 22 inches; gravelly sandy clay loam
 Layer 4—22 to 60 inches; stratified extremely gravelly
 loamy sand to sandy clay loam

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: Medium
 Saturated hydraulic conductivity class (root zone):
 Moderately High, (Permeability class: Moderately
 slow)
 Available water capacity: About 8 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6e
 Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Component Description

Cassiro and similar soils

Landform: Fan remnants
 Slope: 2 to 8 percent
 Parent material: Alluvium from mixed rock sources
 Typical vegetation: Thurber needlegrass, big sagebrush,
 basin wildrye, bluegrass, other perennial forbs,
 antelope bitterbrush

Typical profile:

Surface rock fragments: About 20 percent subrounded
 gravel
 Layer 1—0 to 15 inches; gravelly sandy loam
 Layer 2—15 to 45 inches; very gravelly sandy clay

Layer 3—45 to 55 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 40 to 65 inches

Saturated hydraulic conductivity class (root zone): Low, (Permeability class: Very slow)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Irrigated land capability: 2e

Nonirrigated land capability: 6e

Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Indiano and similar soils

Composition: 0 to 4 percent

Slope: 4 to 30 percent

Landform: Hills

Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, bluegrass, other perennial forbs, antelope bitterbrush

Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Oxyaquic Xerofluvents and similar soils

Composition: 0 to 4 percent

Slope: 0 to 2 percent

Landform: Flood plains

Typical vegetation: Inland saltgrass, alkali sacaton, basin wildrye, other perennial grasses, other perennial forbs, black greasewood, Torrey's saltbush, other shrubs

Ecological site: R026XY012NV—Dry floodplain 8-10 P.Z.

Aquic Xerofluvents and similar soils

Composition: 0 to 3 percent

Classification: Sandy-skeletal, mixed, mesic Aquic Xerofluvents

Slope: 0 to 2 percent

Landform: Flood plains

Typical vegetation: Basin wildrye, Nevada bluegrass, other perennial grasses, other perennial forbs, basin big sagebrush, rubber rabbitbrush, other shrubs
Ecological site: R026XY034NV—Wash 8-12 P.Z.

Fluvaquentic Haploxerolls and similar soils

Composition: 0 to 2 percent

Classification: Loamy-skeletal, mixed, superactive, mesic Fluvaquentic Haploxerolls

Slope: 0 to 8 percent

Landform: Drainageways

Typical vegetation: Sedge, basin wildrye, creeping wildrye, Nevada bluegrass, Woods' rose, yellow willow, silver buffaloberry

Ecological site: R026XY073NV—Streambank

Kimmerling and similar soils

Composition: 0 to 2 percent

Slope: 2 to 8 percent

Landform: Swales

Typical vegetation: Sedge, meadow barley, rush, creeping wildrye, Nevada bluegrass, other perennial forbs

Ecological site: R026XY003NV—Wet meadow 10-14 P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Crops and Pasture" section

"Engineering" and "Soil Properties" sections

680—Rolldown-Mountpatterson-Rubble land complex, 4 to 30 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 10,000 to 11,600

Precipitation: 20 to 30 inches

Air temperature: 33 to 38 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Rolldown extremely gravelly ashy loam, 4 to 30 percent slopes—40 percent

Mountpatterson extremely gravelly ashy sandy loam, 4 to 30 percent slopes—25 percent

Rubble land, 8 to 30 percent slopes—20 percent

Coldtree very gravelly loamy coarse sand, 8 to 30 percent slopes—4 percent

Longday extremely gravelly fine sandy loam, 8 to 30 percent slopes—3 percent

Dab extremely gravelly sandy loam, moist, 15 to 50 percent slopes—2 percent

Coldtree very gravelly loamy coarse sand, cool, 8 to 30 percent slopes—2 percent

Rock outcrop—2 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent

Component Description

Rolldown and similar soils

Landform: Shoulders of moraines

Slope: 4 to 30 percent

Parent material: Till from volcanic and metavolcanic rock

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Typical profile:

Surface rock fragments: About 65 percent gravel, 13 percent cobbles, 2 percent stones

Layer 1—0 to 2 inches; extremely gravelly ashy loam

Layer 2—2 to 10 inches; very gravelly ashy loam

Layer 3—10 to 60 inches; extremely gravelly sandy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY032NV—Alpine ridge

Component Description

Mountpatterson and similar soils

Landform: Mountains

Slope: 4 to 30 percent

Parent material: Volcanic ash and colluvium derived from volcanic rock over residuum weathered from volcanic rock

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Typical profile:

Surface rock fragments: About 30 percent gravel, 30 percent cobbles, 15 percent stones, 10 percent channers

Layer 1—0 to 9 inches; extremely gravelly ashy sandy loam

Layer 2—9 to 18 inches; extremely gravelly ashy loam

Layer 3—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.5 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY032NV—Alpine ridge

Component Description

Rubble land

Landform: Scree slopes

Slope: 8 to 30 percent

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Coldtree and similar soils

Composition: 0 to 4 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs

Ecological site: F022AY126NV

Longday and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Coldtree cold and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Bluegrass, other perennial forbs, whitebark pine

Ecological site: R022AY051NV—Krummholz

Dab and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, spike fescue, other perennial forbs, mountain big sagebrush

Ecological site: R022AY045NV—Gravelly loamy slope 20-30 P.Z.

Rock outcrop

Composition: 0 to 2 percent

Landform: Mountains

Ecological site: None

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls

Slope: 0 to 8 percent

Landform: Dissected plains

Typical vegetation: Nebraska sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses

Ecological site: R022AY016NV—Wet meadow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

700—Coldtree-Rubble land complex, 30 to 75 percent slopes**Map Unit Setting**

MLRA: 22A

Landscape: Mountains

Elevation: 9,500 to 11,500

Precipitation: 20 to 30 inches

Air temperature: 34 to 37 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Coldtree very gravelly loamy coarse sand, 30 to 75 percent slopes—75 percent

Rubble land, 30 to 75 percent slopes—10 percent

Sumeadow very gravelly peaty sandy loam, 15 to 50 percent slopes—4 percent

Coldtree very gravelly loamy coarse sand, 8 to 30 percent slopes—2 percent

Coldtree very gravelly loamy coarse sand, cool, 15 to 50 percent slopes—2 percent

Dab extremely gravelly sandy loam, moist, 15 to 50 percent slopes—2 percent

Holdon extremely gravelly loamy coarse sand, 30 to 75 percent slopes—2 percent

Thief ridge very stony fine sandy loam, 15 to 50 percent slopes—2 percent

Rock outcrop—1 percent

Component Description**Coldtree and similar soils**

Landform: Mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs

Typical profile:

Surface rock fragments: About 55 percent gravel, 5 percent cobbles, 3 percent stones

Layer 1—0 to 1 inch; very gravelly loamy coarse sand

Layer 2—1 to 9 inches; extremely gravelly sandy loam

Layer 3—9 to 24 inches; extremely gravelly sandy loam

Layer 4—24 to 44 inches; extremely cobbly loam

Layer 5—44 to 54 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 4 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: F022AY126NV

Component Description

Rubble land

Landform: Scree slopes
 Slope: 30 to 75 percent

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Sumeadow and similar soils

Composition: 0 to 4 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry
 Ecological site: F022AY127NV

Coldtree and similar soils

Composition: 0 to 2 percent
 Slope: 8 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs
 Ecological site: F022AY126NV

Coldtree cold and similar soils

Composition: 0 to 2 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Bluegrass, whitebark pine, other perennial forbs
 Ecological site: R022AY051NV

Dab and similar soils

Composition: 0 to 2 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, spike fescue, other perennial forbs, mountain big sagebrush

Ecological site: R022AY045NV—Gravelly loamy slope 20-30 P.Z.

Holdon and similar soils

Composition: 0 to 2 percent
 Slope: 30 to 75 percent
 Landform: Mountains
 Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs
 Ecological site: R022AY032NV—Alpine ridge

Thief ridge and similar soils

Composition: 0 to 2 percent
 Slope: 15 to 50 percent
 Landform: Shoulders of mountains
 Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany
 Ecological site: R022AY024NV—Mahogany Savanna

Rock outcrop

Composition: 0 to 1 percent
 Landform: Mountains
 Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Engineering" and "Soil Properties" sections

710—Bakscratch-Grandridge-McTom association

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 9,500 to 11,000
 Precipitation: 20 to 30 inches
 Air temperature: 36 to 37 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Bakscratch very gravelly coarse sandy loam, cool, 30 to 75 percent slopes—45 percent
 Grandridge very gravelly coarse sandy loam, 15 to 50 percent slopes—25 percent
 McTom very stony loamy coarse sand, 30 to 75 percent slopes—15 percent
 Delhew very gravelly coarse sandy loam, 15 to 50 percent slopes—5 percent

Bakscratch very gravelly coarse sandy loam, 15 to 50 percent slopes—4 percent
 Rock outcrop—2 percent
 Rubble land, 30 to 75 percent slopes—2 percent
 Typic Cryorthents very gravelly loamy coarse sand, 30 to 75 percent slopes—2 percent

Component Description

Bakscratch and similar soils

Landform: Backslopes of mountains
 Slope: 30 to 75 percent
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Needlegrass, bluegrass, other perennial forbs, curlleaf mountainmahogany, snowberry

Typical profile:

Surface rock fragments: About 25 percent gravel, 15 percent cobbles, 25 percent stones
 Layer 1—0 to 7 inches; very gravelly coarse sandy loam
 Layer 2—7 to 11 inches; very gravelly coarse sandy loam
 Layer 3—11 to 16 inches; very gravelly coarse sandy loam
 Layer 4—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)
 Available water capacity: About 1.3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7e
 Ecological site: R022AY025NV—Mahogany thicket

Component Description

Grandridge and similar soils

Landform: Shoulders and summits of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Typical profile:

Surface rock fragments: About 70 percent gravel, 3 percent stones, 5 percent cobbles
 Layer 1—0 to 1 inch; very gravelly coarse sandy loam
 Layer 2—1 to 10 inches; very gravelly sandy clay loam
 Layer 3—10 to 18 inches; very gravelly sandy clay loam
 Layer 4—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7e
 Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Component Description

McTom and similar soils

Landform: Backslopes of mountains
 Slope: 30 to 75 percent
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs

Typical profile:

Surface rock fragments: About 25 percent subrounded gravel, 5 percent subrounded cobbles, 10 percent subrounded stones, 10 percent subrounded boulders
 Layer 1—0 to 2 inches; very stony slightly decomposed plant material
 Layer 2—2 to 18 inches; extremely stony loamy coarse sand
 Layer 3—18 to 34 inches; extremely cobbly loamy coarse sand
 Layer 4—34 to 44 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7e

Ecological site: F022AY126NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Delhew and similar soils**

Composition: 0 to 5 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, snowberry

Ecological site: R022AY052NV—Gravelly slope 16+ P.Z.

Bakscratch and similar soils

Composition: 0 to 4 percent

Slope: 15 to 50 percent

Landform: Shoulders of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Rock outcrop

Composition: 0 to 2 percent

Landform: Mountains

Ecological site: None

Rubble land

Composition: 0 to 2 percent

Slope: 30 to 75 percent

Landform: Scree slopes

Ecological site: None

Typic Cryorthents and similar soils

Composition: 0 to 2 percent

Classification: Sandy-skeletal, mixed, shallow Typic Cryorthents

Slope: 30 to 75 percent

Landform: Shoulders of mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Ecological site: R022AY032NV—Alpine ridge

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

720—Nohelp-Joenchris association***Map Unit Setting***

MLRA: 26

Landscape: Fan piedmont

Elevation: 6,200 to 7,800

Precipitation: 14 to 16 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 50 to 70 days

Composition

Nohelp gravelly ashy sandy loam, 4 to 30 percent slopes—55 percent

Joenchris gravelly ashy sandy loam, 4 to 30 percent slopes—35 percent

Burchflat very gravelly sandy loam, 4 to 30 percent slopes—4 percent

Aquic Haplocryolls very gravelly sandy loam, 0 to 8 percent slopes—2 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—2 percent

Aquic Argicryolls very gravelly sandy loam, 0 to 8 percent slopes—2 percent

Component Description**Nohelp and similar soils**

Landform: Fan remnants

Slope: 4 to 30 percent

Parent material: Alluvium from volcanic and metavolcanic rock with additions of volcanic ash

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 20 percent gravel, 6 percent cobbles

Layer 1—0 to 11 inches; gravelly ashy sandy loam

Layer 2—11 to 21 inches; very gravelly clay loam

Layer 3—21 to 60 inches; extremely gravelly clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Saturated hydraulic conductivity class (root zone):

Moderately Low, (Permeability class: Slow)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Irrigated land capability: 4e

Nonirrigated land capability: 6e

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Component Description

Joenchris and similar soils

Landform: Fan remnants

Slope: 4 to 30 percent

Parent material: Alluvium from volcanic and metavolcanic rock with additions of volcanic ash

Typical vegetation: Western needlegrass, pine needlegrass, Thurber's needlegrass, other perennial forbs, low sagebrush

Typical profile:

Surface rock fragments: About 20 percent gravel, 10 percent stones

Layer 1—0 to 6 inches; gravelly ashy sandy loam

Layer 2—6 to 14 inches; gravelly clay loam

Layer 3—14 to 26 inches; clay

Layer 4—26 to 60 inches; very cobbly clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Saturated hydraulic conductivity class (root zone):

Moderately Low, (Permeability class: Slow)

Available water capacity: About 7 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6e

Ecological site: R022AY049NV—Claypan 14-16 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Burchflat and similar soils

Composition: 0 to 4 percent

Slope: 4 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Aquic Argicryolls and similar soils

Composition: 0 to 2 percent

Classification: Loamy-skeletal, mixed, superactive Aquic Argicryolls

Slope: 0 to 8 percent

Landform: Footslopes of stream terraces

Typical vegetation: Forest canopy—quaking aspen

Forest understory—slender wheatgrass, Nevada

bluegrass, other perennial forbs, Woods' rose, willow

Ecological site: F022AY104NV

Aquic Haplocryolls and similar soils

Composition: 0 to 2 percent

Classification: Loamy-skeletal, mixed, superactive Aquic Haplocryolls

Slope: 0 to 8 percent

Landform: Footslopes of stream terraces

Typical vegetation: Forest canopy—quaking aspen

Forest understory—creeping wildrye, Woods' rose,

willow, Kentucky bluegrass

Ecological site: R022AY015NV—Streambank

Cumulic Cryaquolls and similar soils

Composition: 0 to 2 percent

Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls

Slope: 0 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
"Range" section

"Forest land" section
 "Crops and Pasture" section
 "Engineering" and "Soil Properties" sections

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

730—Burchflat-Loope association

Map Unit Setting

MLRA: 26
 Landscape: Mountains
 Elevation: 7,000 to 8,300
 Precipitation: 16 to 24 inches
 Air temperature: 39 to 45 degrees Fahrenheit
 Frost-free period: 40 to 70 days

Composition

Burchflat very gravelly sandy loam, 4 to 30 percent
 slopes—55 percent
 Loope very gravelly sandy loam, 4 to 15 percent
 slopes—30 percent
 Aspocket gravelly sandy loam, 4 to 30 percent slopes—3
 percent
 Gerdog very gravelly sandy loam, 4 to 30 percent
 slopes—3 percent
 Leroman very gravelly sandy loam, 4 to 30 percent
 slopes—3 percent
 Celeridge extremely bouldery sandy loam, 4 to 30
 percent slopes—2 percent
 Murain very gravelly coarse sandy loam, 4 to 30 percent
 slopes—1 percent
 Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent
 slopes—1 percent
 Pachic Argicryolls very stony sandy loam, moist, 15 to
 50 percent slopes—1 percent
 Rock outcrop—1 percent

Component Description

Burchflat and similar soils

Landform: Backslopes of mountains
 Slope: 4 to 30 percent
 Parent material: Colluvium derived from andesite or tuff
 breccia over residuum derived from andesite or tuff
 breccia
 Typical vegetation: Western needlegrass, other
 perennial forbs, mountain big sagebrush, antelope
 bitterbrush

Typical profile:

Surface rock fragments: About 35 percent gravel, 5
 percent cobbles, 3 percent stones
 Layer 1—0 to 9 inches; very gravelly sandy loam
 Layer 2—9 to 21 inches; extremely gravelly loam
 Layer 3—21 to 36 inches; extremely cobbly loam
 Layer 4—36 to 46 inches; bedrock

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 20 to 40
 inches
 Saturated hydraulic conductivity class (root zone):
 Moderately High, (Permeability class: Moderate)
 Available water capacity: About 4 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R022AY044NV—Coarse loamy 16-20
 P.Z.

Component Description

Loope and similar soils

Landform: Shoulders of mountains
 Slope: 4 to 15 percent
 Parent material: Colluvium derived from andesite or tuff
 breccia over residuum derived from andesite or tuff
 breccia
 Typical vegetation: Western needlegrass, basin wildrye,
 other perennial forbs, mountain big sagebrush,
 antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent gravel, 2
 percent stones, 5 percent cobbles
 Layer 1—0 to 1 inch; very gravelly sandy loam
 Layer 2—1 to 14 inches; extremely gravelly sandy clay
 loam
 Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 14 to 20
 inches
 Saturated hydraulic conductivity class (root zone):
 Moderately High, (Permeability class: Moderate)
 Available water capacity: About 1.4 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Aspocket and similar soils**

Composition: 0 to 3 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Gerdog and similar soils

Composition: 0 to 3 percent

Slope: 4 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Needlegrass, Thurber's needlegrass, mountain brome, bluegrass, other perennial forbs, low sagebrush, antelope bitterbrush

Ecological site: R022AY028NV—Claypan 16+ P.Z.

Leroman and similar soils

Composition: 0 to 3 percent

Slope: 4 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain brome, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY030NV—Gravelly loam 14-16 P.Z.

Celeridge and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive

Cumulic Cryaquolls

Slope: 0 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Murain and similar soils

Composition: 0 to 1 percent

Slope: 4 to 30 percent

Landform: Moraines

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Pachic Argicryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive
Pachic Argicryolls

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Muttongrass, other perennial grasses, other perennial forbs, mountain big sagebrush, bitter cherry, common chokecherry, western needlegrass, mountain brome, snowberry

Ecological site: R022AY020NV—Prunus pocket

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

731—Burchflat-Celeridge-Loope association***Map Unit Setting***

MLRA: 26

Landscape: Mountains

Elevation: 7,000 to 8,300

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Burchflat very gravelly sandy loam, 15 to 50 percent slopes—45 percent

Loope very gravelly sandy loam, 15 to 50 percent slopes—20 percent
 Celeridge extremely bouldery sandy loam, moist, 4 to 30 percent slopes—20 percent
 Murain very gravelly coarse sandy loam, 4 to 30 percent slopes—3 percent
 Dogbed very gravelly sandy loam, 15 to 50 percent slopes—3 percent
 Aspocket gravelly sandy loam, 4 to 30 percent slopes—2 percent
 Gerdog very gravelly sandy loam, 4 to 30 percent slopes—2 percent
 Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent
 Pachic Argicryolls very stony sandy loam, moist, 15 to 50 percent slopes—1 percent
 Rock outcrop—1 percent
 Celeridge extremely bouldery sandy loam, 4 to 30 percent slopes—1 percent
 Joecut very gravelly sandy loam, dry, 15 to 50 percent slopes—1 percent

Component Description

Burchflat and similar soils

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 35 percent gravel, 5 percent cobbles, 3 percent stones
 Layer 1—0 to 9 inches; very gravelly sandy loam
 Layer 2—9 to 21 inches; extremely gravelly loam
 Layer 3—21 to 36 inches; extremely cobbly loam
 Layer 4—36 to 46 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 4 inches
 Present flooding: None
 Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Component Description

Celeridge and similar soils

Landform: Shoulders of mountains
 Slope: 4 to 30 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Needlegrass, bluegrass, other perennial forbs, curlleaf mountainmahogany, snowberry

Typical profile:

Surface rock fragments: About 20 percent boulders, 15 percent gravel, 10 percent stones, 10 percent cobbles
 Layer 1—0 to 3 inches; extremely bouldery sandy loam
 Layer 2—3 to 8 inches; extremely gravelly sandy loam
 Layer 3—8 to 19 inches; extremely gravelly sandy clay loam
 Layer 4—19 to 29 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R022AY025NV—Mahogany thicket

Component Description

Loope and similar soils

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, basin wildrye, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent gravel, 2 percent stones, 5 percent cobbles
 Layer 1—0 to 1 inch; very gravelly sandy loam
 Layer 2—1 to 14 inches; extremely gravelly sandy clay loam
 Layer 3—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 1.4 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R022AY042NV—Shallow loam 16-20 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Dogbed and similar soils

Composition: 0 to 3 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush
 Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Murain and similar soils

Composition: 0 to 3 percent
 Slope: 4 to 30 percent
 Landform: Moraines
 Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Aspocket and similar soils

Composition: 0 to 2 percent
 Slope: 4 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry
 Ecological site: F022AY103NV

Gerdog and similar soils

Composition: 0 to 2 percent
 Slope: 4 to 30 percent
 Landform: Shoulders of mountains
 Typical vegetation: Needlegrass, Thurber's needlegrass, mountain brome, bluegrass, other perennial forbs, low sagebrush, antelope bitterbrush
 Ecological site: R022AY028NV—Claypan 16+ P.Z.

Celeridge and similar soils

Composition: 0 to 1 percent
 Slope: 4 to 30 percent
 Landform: Shoulders of mountains
 Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany
 Ecological site: R022AY024NV—Mahogany Savanna

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent
 Classification: Coarse-loamy, mixed, superactive
 Cumulic Cryaquolls
 Slope: 0 to 8 percent
 Landform: Dissected plains
 Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs
 Ecological site: R022AY017NV—Semi-wet meadow

Joecut and similar soils

Composition: 0 to 1 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, mountain big sagebrush, snowberry, currant
 Ecological site: F022AY116NV

Pachic Argicryolls and similar soils

Composition: 0 to 1 percent
 Classification: Loamy-skeletal, mixed, superactive
 Pachic Argicryolls

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain brome, muttongrass, other perennial grasses, other perennial forbs, mountain big sagebrush, bitter cherry, common chokecherry, snowberry

Ecological site: R022AY020NV—Prunus pocket

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

740—Jackflat-Grandridge association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 9,000

Precipitation: 16 to 24 inches

Air temperature: 37 to 43 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Jackflat very gravelly coarse sandy loam, 4 to 30 percent slopes—55 percent

Grandridge very gravelly coarse sandy loam, 4 to 30 percent slopes—30 percent

Pachic Argicryolls very gravelly coarse sandy loam, 15 to 50 percent slopes—5 percent

Elaero very gravelly loamy coarse sand, 15 to 50 percent slopes—4 percent

Bakscratch very gravelly coarse sandy loam, cool, 30 to 75 percent slopes—4 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent

Rock outcrop—1 percent

Component Description

Jackflat and similar soils

Landform: Shoulders of mountains

Slope: 4 to 30 percent

Parent material: Colluvium and slope alluvium from granodiorite

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, snowberry

Typical profile:

Surface rock fragments: About 35 percent gravel, 5 percent cobbles, 3 percent stones

Layer 1—0 to 6 inches; very gravelly coarse sandy loam

Layer 2—6 to 14 inches; very gravelly sandy loam

Layer 3—14 to 45 inches; very stony sandy clay loam

Layer 4—45 to 55 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY052NV—Gravelly slope 16+ P.Z.

Component Description

Grandridge and similar soils

Landform: Summits and shoulders of mountains

Slope: 4 to 30 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Typical profile:

Surface rock fragments: About 70 percent gravel, 5 percent cobbles, 3 percent stones

Layer 1—0 to 1 inch; very gravelly coarse sandy loam

Layer 2—1 to 10 inches; very gravelly sandy clay loam

Layer 3—10 to 18 inches; very gravelly sandy clay loam

Layer 4—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderate)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Pachic Argicryolls and similar soils

Composition: 0 to 5 percent

Classification: Loamy-skeletal, mixed, superactive
Pachic Argicryolls

Slope: 15 to 50 percent, south aspect

Landform: South facing backslopes of mountains

Typical vegetation: Mountain big sagebrush, Letterman
needlegrass, spike fescue, snowberry

Ecological site: R022AY021NV—South slope 30+ P.Z.

Bakscratch and similar soils

Composition: 0 to 4 percent

Slope: 30 to 75 percent

Landform: Backslopes of mountains

Typical vegetation: Needlegrass, bluegrass, other
perennial forbs, curlleaf mountainmahogany,
snowberry

Ecological site: R022AY025NV—Mahogany thicket

Elaero and similar soils

Composition: 0 to 4 percent

Slope: 15 to 50 percent, south aspect

Landform: South facing mountains

Typical vegetation: Needlegrass, Indian ricegrass, other
perennial forbs, mountain big sagebrush, antelope
bitterbrush

Ecological site: R022AY043NV—South slope 14-16 P.Z.

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive
Cumulic Cryaquolls

Slope: 0 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted
hairgrass, Baltic rush, bluegrass, other perennial
grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the
following sections and associated tables in this
publication:

"Range" section

"Engineering" and "Soil Properties" sections

760—Thiefridge-Rock outcrop complex, 30 to 75 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 10,000

Precipitation: 30 to 45 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Thiefridge very stony fine sandy loam, 30 to 75 percent
slopes—45 percent

Thiefridge very stony fine sandy loam, 30 to 75 percent
slopes—30 percent

Rock outcrop—10 percent

Hawkinspeak very gravelly sandy loam, warm, 15 to 50
percent slopes—5 percent

Hawkinspeak very gravelly sandy loam, 15 to 50 percent
slopes—3 percent

Aspocket gravelly sandy loam, 15 to 50 percent slopes—
3 percent

Lostridge very gravelly coarse sandy loam, dry, 15 to 50
percent slopes—2 percent

Chutes—1 percent

Pachic Argicryolls very stony sandy loam, moist, 15 to
50 percent slopes—1 percent

Component Description

Thiefridge and similar soils

Landform: Backslopes of mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from andesite or tuff
breccia over residuum derived from andesite or tuff
breccia

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Typical profile:

Surface rock fragments: About 20 percent gravel, 15 percent cobbles, 20 percent stones

Layer 1—0 to 1 inch; very stony slightly decomposed plant material

Layer 2—1 to 4 inches; very cobbly fine sandy loam

Layer 3—4 to 8 inches; extremely cobbly sandy loam

Layer 4—8 to 12 inches; extremely cobbly sandy loam

Layer 5—12 to 17 inches; very cobbly sandy loam

Layer 6—17 to 27 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY024NV—Mahogany Savanna

Component Description

Thief ridge and similar soils

Landform: Backslopes of mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, curlleaf mountainmahogany, snowberry

Typical profile:

Surface rock fragments: About 20 percent gravel, 15 percent cobbles, 20 percent stones

Layer 1—0 to 1 inch; very stony slightly decomposed plant material

Layer 2—1 to 4 inches; very cobbly fine sandy loam

Layer 3—4 to 8 inches; extremely cobbly sandy loam

Layer 4—8 to 12 inches; extremely cobbly sandy loam

Layer 5—12 to 17 inches; very cobbly sandy loam

Layer 6—17 to 27 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY025NV—Mahogany thicket

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Hawkinspeak and similar soils

Composition: 0 to 5 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY021NV—South slope 30+ P.Z.

Aspocket and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Hawkinspeak and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome
 Ecological site: R022AY010NV—Mountain shoulders 30+ P.Z.

Lostridge and similar soils

Composition: 0 to 2 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—lodgepole pine
 Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry
 Ecological site: F022AY127NV

Chutes

Composition: 0 to 1 percent
 Landform: Avalanche chutes
 Ecological site: None

Pachic Argicryolls and similar soils

Composition: 0 to 1 percent
 Classification: Loamy-skeletal, mixed, superactive
 Pachic Argicryolls
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Western needlegrass, mountain brome, muttongrass, other perennial grasses, other perennial forbs, mountain big sagebrush, bitter cherry, common chokecherry, snowberry
 Ecological site: R022AY020NV—Prunus pocket

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

770—Sweetmount-Hawkinspeak-HawkrIDGE association

Map Unit Setting

MLRA: 22A
 Landscape: Mountains
 Elevation: 8,000 to 10,000
 Precipitation: 20 to 30 inches
 Air temperature: 36 to 42 degrees Fahrenheit
 Frost-free period: 30 to 60 days

Composition

Sweetmount very gravelly sandy loam, 4 to 30 percent slopes—50 percent

Hawkinspeak very gravelly sandy loam, warm, 15 to 50 percent slopes—20 percent
 HawkrIDGE very stony sandy loam, 4 to 30 percent slopes—15 percent
 Sumeadow very gravelly peaty sandy loam, cool, 4 to 15 percent slopes—3 percent
 Burchflat very gravelly sandy loam, 4 to 30 percent slopes—3 percent
 Pachic Argicryolls extremely gravelly sandy loam, 15 to 50 percent slopes—3 percent
 Aspocket gravelly sandy loam, 4 to 30 percent slopes—2 percent
 Hawkinspeak very gravelly sandy loam, 30 to 50 percent slopes—2 percent
 ThiefrIDGE very stony fine sandy loam, 4 to 30 percent slopes—1 percent
 Rock outcrop—1 percent

Component Description

Sweetmount and similar soils

Landform: Backslopes of mountains
 Slope: 4 to 30 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia
 Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, snowberry

Typical profile:

Surface rock fragments: About 35 percent gravel, 6 percent cobbles, 4 percent stones, 4 percent boulders
 Layer 1—0 to 2 inches; very gravelly sandy loam
 Layer 2—2 to 16 inches; very gravelly loam
 Layer 3—16 to 24 inches; very gravelly clay loam
 Layer 4—24 to 39 inches; very gravelly clay loam
 Layer 5—39 to 55 inches; extremely gravelly clay
 Layer 6—55 to 65 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
 Saturated hydraulic conductivity class (root zone): Moderately Low, (Permeability class: Slow)
 Available water capacity: About 8 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY052NV—Gravelly slope 16+ P.Z.

Component Description**Hawkinspeak and similar soils**

Landform: South facing backslopes of mountains

Slope: 15 to 50 percent, south aspect

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 45 percent gravel, 5 percent cobbles, 3 percent stones, 1 percent boulders

Layer 1—0 to 3 inches; very gravelly sandy loam

Layer 2—3 to 9 inches; very gravelly sandy loam

Layer 3—9 to 33 inches; very gravelly sandy clay loam

Layer 4—33 to 43 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY021NV—South slope 30+ P.Z.

Component Description**Hawkridge and similar soils**

Landform: Summits and shoulders of mountains

Slope: 4 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Typical profile:

Surface rock fragments: About 30 percent gravel, 10 percent cobbles, 10 percent stones

Layer 1—0 to 1 inch; very stony sandy loam

Layer 2—1 to 7 inches; very gravelly sandy loam

Layer 3—7 to 14 inches; very gravelly sandy clay loam

Layer 4—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 7 to 14 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Burchflat and similar soils**

Composition: 0 to 3 percent

Slope: 4 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY044NV—Coarse loamy 16-20 P.Z.

Pachic Argicryolls and similar soils

Composition: 0 to 3 percent

Classification: Loamy-skeletal, mixed, superactive Pachic Argicryolls

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, sedge, lupine, mountain big sagebrush

Ecological site: R022AY027NV—Mountain basin

Sumeadow and similar soils

Composition: 0 to 3 percent

Slope: 4 to 15 percent

Landform: Shoulders of mountains

Typical vegetation: Forest canopy—lodgepole pine

Forest understory—other perennial forbs, mountain big sagebrush, currant, snowberry

Ecological site: F022AY127NV

Aspocket and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Hawkinspeak and similar soils

Composition: 0 to 2 percent

Slope: 30 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, mountain big sagebrush, mountain brome

Ecological site: R022AY010NV—Mountain shoulders 30+ P.Z.

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Thiefridge and similar soils

Composition: 0 to 1 percent

Slope: 4 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

780—Granhogany-Rock outcrop complex, 15 to 50 percent slopes**Map Unit Setting**

MLRA: 22A

Landscape: Mountains

Elevation: 7,000 to 8,500

Precipitation: 16 to 24 inches

Air temperature: 39 to 43 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Granhogany very gravelly loamy coarse sand, 15 to 50 percent slopes—65 percent

Rock outcrop—20 percent

Granhogany very gravelly loamy coarse sand, moist, 8 to 30 percent slopes—5 percent

Delhew very gravelly coarse sandy loam, 30 to 50 percent slopes—4 percent

Elaero very gravelly loamy coarse sand, 15 to 50 percent slopes—3 percent

Pimogran very gravelly loamy coarse sand, 15 to 50 percent slopes—3 percent

Component Description**Granhogany and similar soils**

Landform: Mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Typical profile:

Surface rock fragments: About 35 percent subrounded gravel, 10 percent subrounded cobbles

Layer 1—0 to 4 inches; very gravelly loamy coarse sand

Layer 2—4 to 15 inches; very gravelly loamy coarse sand

Layer 3—15 to 25 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.6 inch

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: R022AY024NV—Mahogany Savanna

Component Description**Rock outcrop**

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Granhogany and similar soils**

Composition: 0 to 5 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, curlleaf mountainmahogany, snowberry

Ecological site: R022AY025NV—Mahogany thicket

Delhew and similar soils

Composition: 0 to 4 percent

Slope: 30 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, snowberry

Ecological site: R022AY052NV—Gravelly slope 16+ P.Z.

Elaero and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Needlegrass, Indian ricegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY043NV—South slope 14-16 P.Z.

Pimogran and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent, north aspect

Landform: North facing mountains

Typical vegetation: Forest canopy—singleleaf pinyon
Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush

Ecological site: F026XY044NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

790—Dab association**Map Unit Setting**

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 9,500

Precipitation: 20 to 30 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Dab extremely gravelly sandy loam, warm, 30 to 50 percent slopes—50 percent

Dab extremely gravelly sandy loam, moist, 15 to 50 percent slopes—35 percent

Thiefride very stony fine sandy loam, 4 to 30 percent slopes—4 percent

Sweetmount very gravelly sandy loam, 4 to 15 percent slopes—3 percent

Aspocket gravelly sandy loam, 4 to 30 percent slopes—3 percent

Hawkridge extremely gravelly coarse sandy loam, 8 to 30 percent slopes—3 percent

Rock outcrop—1 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent

Component Description**Dab and similar soils**

Landform: Mountains

Slope: 30 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, spike fescue, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 75 percent gravel, 1 percent cobbles, 1 percent stones

Layer 1—0 to 3 inches; extremely gravelly sandy loam

Layer 2—3 to 10 inches; extremely gravelly sandy loam

Layer 3—10 to 24 inches; extremely gravelly sandy clay loam

Layer 4—24 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY039NV—Stony South slope 16-30 P.Z.

Component Description

Dab and similar soils

Landform: Mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, spike fescue, other perennial forbs, mountain big sagebrush

Typical profile:

Surface rock fragments: About 75 percent gravel, 1 percent cobbles, 1 percent stones

Layer 1—0 to 3 inches; extremely gravelly sandy loam

Layer 2—3 to 10 inches; extremely gravelly sandy loam

Layer 3—10 to 24 inches; extremely gravelly sandy clay loam

Layer 4—24 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY045NV—Gravelly loamy slope 20-30 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Thief ridge and similar soils

Composition: 0 to 4 percent

Slope: 4 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Aspocket and similar soils

Composition: 0 to 3 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Hawkridge and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Sweetmount and similar soils

Composition: 0 to 3 percent

Slope: 4 to 15 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, other

perennial forbs, mountain big sagebrush, snowberry

Ecological site: R022AY052NV—Gravelly slope 16+ P.Z.

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls

Slope: 0 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

791—Dab-Longday-Thiefridge association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 10,000

Precipitation: 20 to 30 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Dab extremely gravelly sandy loam, moist, 15 to 50 percent slopes—45 percent

Longday extremely gravelly fine sandy loam, 15 to 50 percent slopes—25 percent

Thiefridge very stony fine sandy loam, 8 to 30 percent slopes—15 percent

Dab extremely gravelly sandy loam, 15 to 50 percent slopes—3 percent

Dab extremely gravelly sandy loam, warm, 30 to 50 percent slopes—3 percent

Hawkridge extremely gravelly coarse sandy loam, 8 to 30 percent slopes—3 percent

Aspocket gravelly sandy loam, 4 to 30 percent slopes—2 percent

Coldtree very gravelly loamy coarse sand, 30 to 50 percent slopes—1 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent

Pachic Argicryolls extremely gravelly sandy loam, moist, 15 to 50 percent slopes—1 percent

Rock outcrop—1 percent

Component Description

Dab and similar soils

Landform: Mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Other perennial forbs, western needlegrass, spike fescue, mountain big sagebrush

Typical profile:

Surface rock fragments: About 75 percent gravel, 1 percent cobbles, 1 percent stones

Layer 1—0 to 3 inches; extremely gravelly sandy loam

Layer 2—3 to 12 inches; extremely gravelly sandy loam

Layer 3—12 to 24 inches; extremely gravelly sandy clay loam

Layer 4—24 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY045NV—Gravelly loamy slope 20-30 P.Z.

Component Description

Longday and similar soils

Landform: Mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Typical profile:

Surface rock fragments: About 65 percent gravel, 10 percent cobbles

Layer 1—0 to 5 inches; extremely gravelly fine sandy loam

Layer 2—5 to 13 inches; extremely gravelly sandy clay loam

Layer 3—13 to 60 inches; extremely gravelly sandy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Component Description

Thief ridge and similar soils

Landform: Shoulders of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Typical profile:

Surface rock fragments: About 20 percent gravel, 15 percent cobbles, 20 percent stones

Layer 1—0 to 1 inch; very stony slightly decomposed plant material

Layer 2—1 to 4 inches; very cobbly fine sandy loam

Layer 3—4 to 8 inches; extremely cobbly sandy loam

Layer 4—8 to 12 inches; extremely cobbly sandy loam

Layer 5—12 to 17 inches; very cobbly sandy loam

Layer 6—17 to 27 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY024NV—Mahogany Savanna

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Dab and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Western needlegrass, mountain brome, spike fescue, lupine, melic, bluegrass, mountain big sagebrush

Ecological site: R022AY055NV—Mountain shoulders 20-30 P.Z.

Dab and similar soils

Composition: 0 to 3 percent

Slope: 30 to 50 percent

Landform: Mountains

Typical vegetation: Western needlegrass, spike fescue, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY039NV—Stony South slope 16-30 P.Z.

Hawkridge and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Aspocket and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Coldtree and similar soils

Composition: 0 to 1 percent

Slope: 30 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs

Ecological site: F022AY126NV

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive
Cumulic Cryaquolls

Slope: 0 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Pachic Argicryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive
Pachic Argicryolls

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Western needlegrass, mountain brome, spike fescue, lupine, melic, bluegrass, mountain big sagebrush

Ecological site: R022AY055NV—Mountain shoulders 20-30 P.Z.

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

792—Dab-Aspocket-Hawkridge association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 10,000

Precipitation: 20 to 30 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Dab extremely gravelly sandy loam, moist, 15 to 50 percent slopes—35 percent

Aspocket gravelly sandy loam, 8 to 30 percent slopes—25 percent

Hawkridge very stony sandy loam, 8 to 30 percent slopes—25 percent

Thief ridge very stony fine sandy loam, 4 to 30 percent slopes—3 percent

Dab extremely gravelly sandy loam, 15 to 50 percent slopes—3 percent

Aspocket gravelly sandy loam, moist, 4 to 30 percent slopes—3 percent

Dab extremely gravelly sandy loam, warm, 30 to 50 percent slopes—2 percent

Longday extremely gravelly fine sandy loam, 15 to 50 percent slopes—2 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent

Rock outcrop—1 percent

Component Description

Dab and similar soils

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Western needlegrass, spike fescue, other perennial forbs, mountain big sagebrush

Typical profile:

Surface rock fragments: About 75 percent gravel, 1 percent cobbles, 1 percent stones

Layer 1—0 to 3 inches; extremely gravelly sandy loam

Layer 2—3 to 10 inches; extremely gravelly sandy loam

Layer 3—10 to 24 inches; extremely gravelly sandy clay loam

Layer 4—24 to 60 inches; extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 5 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY045NV—Gravelly loamy slope 20-30 P.Z.

Component Description

Aspocket and similar soils

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Mountain brome, slender wheatgrass, other perennial forbs, snowberry

Typical profile:

Surface rock fragments: About 2 percent stones, 15 percent gravel

Layer 1—0 to 13 inches; gravelly sandy loam

Layer 2—13 to 38 inches; very stony loam

Layer 3—38 to 54 inches; gravelly clay loam

Layer 4—54 to 64 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 7 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F022AY103NV

Component Description

Hawkridge and similar soils

Landform: Summits and shoulders of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Typical profile:

Surface rock fragments: About 30 percent gravel, 10 percent cobbles, 10 percent stones

Layer 1—0 to 1 inch; very stony sandy loam

Layer 2—1 to 7 inches; very gravelly sandy loam

Layer 3—7 to 14 inches; very gravelly sandy clay loam

Layer 4—14 to 24 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 7 to 14 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 1.3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Aspocket and similar soils

Composition: 0 to 3 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen
Forest understory—needlegrass, mountain brome, other perennial forbs, quaking aspen, snowberry
Ecological site: R022AY046NV—Aspen thicket

Dab and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Western needlegrass, mountain brome, spike fescue, lupine, melic, bluegrass, mountain big sagebrush
Ecological site: R022AY055NV—Mountain shoulders 20-30 P.Z.

Thiefridge and similar soils

Composition: 0 to 3 percent

Slope: 4 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Dab and similar soils

Composition: 0 to 2 percent

Slope: 30 to 50 percent

Landform: Mountains

Typical vegetation: Western needlegrass, spike fescue, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY039NV—Stony South slope 16-30 P.Z.

Longday and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive

Cumulic Cryaquolls

Slope: 0 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

800—Grandridge-Delhew association**Map Unit Setting**

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 10,000

Precipitation: 18 to 30 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Grandridge very gravelly coarse sandy loam, 4 to 30 percent slopes—60 percent

Delhew very gravelly loamy coarse sand, 15 to 50 percent slopes—30 percent

Bakscratch very gravelly coarse sandy loam, cool, 4 to 30 percent slopes—3 percent

Elaero very gravelly loamy coarse sand, 15 to 50 percent slopes—2 percent

Jackflat very gravelly coarse sandy loam, 4 to 30 percent slopes—2 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent

Rock outcrop—1 percent

Typic Cryorthents very gravelly loamy coarse sand, 15 to 50 percent slopes—1 percent

Component Description**Grandridge and similar soils**

Landform: Mountains

Slope: 4 to 30 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Pine needlegrass, goldenweed, low sagebrush, prairie junegrass

Typical profile:

Surface rock fragments: About 3 percent stones, 70 percent gravel, 5 percent cobbles

Layer 1—0 to 1 inch; very gravelly coarse sandy loam

Layer 2—1 to 10 inches; very gravelly sandy clay loam

Layer 3—10 to 18 inches; very gravelly sandy clay loam

Layer 4—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R022AY011NV—Mountain ridge 30+ P.Z.

Component Description

Delhew and similar soils

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from granodiorite

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, snowberry

Typical profile:

Surface rock fragments: About 22 percent fine gravel, 43 percent gravel, 2 percent cobbles, 2 percent stones

Layer 1—0 to 16 inches; very gravelly loamy coarse sand

Layer 2—16 to 27 inches; very gravelly coarse sandy loam

Layer 3—27 to 40 inches; extremely gravelly coarse sandy loam

Layer 4—40 to 60 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone): Moderately Low, (Permeability class: Very slow)

Available water capacity: About 4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R022AY052NV—Gravelly slope 16+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Bakscratch and similar soils

Composition: 0 to 3 percent

Slope: 4 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, curleaf mountainmahogany, snowberry

Ecological site: R022AY025NV—Mahogany thicket

Elaero and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Needlegrass, Indian ricegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY043NV—South slope 14-16 P.Z.

Jackflat and similar soils

Composition: 0 to 2 percent

Slope: 4 to 30 percent

Landform: Shoulders of mountains

Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, snowberry

Ecological site: R022AY052NV—Gravelly slope 16+ P.Z.

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls

Slope: 0 to 8 percent

Landform: Dissected plains

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Ecological site: R022AY017NV—Semi-wet meadow

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Typic Cryorthents and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed Typic Cryorthents

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Sedge, bluegrass, other perennial forbs, other shrubs

Ecological site: R022AY053NV—Snow pocket

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

801—Grandridge-Delhew-Bullville association

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 8,000 to 9,200

Precipitation: 16 to 20 inches

Air temperature: 36 to 39 degrees Fahrenheit

Frost-free period: 30 to 60 days

Composition

Grandridge very gravelly coarse sandy loam, dry, 4 to 30 percent slopes—40 percent

Delhew very gravelly loamy coarse sand, dry, 15 to 50 percent slopes—25 percent

Bullville very gravelly coarse sandy loam, 50 to 75 percent slopes—20 percent

Pachic Argicryolls very gravelly coarse sandy loam, 15 to 50 percent slopes—4 percent

Xeric Haplocryolls very gravelly coarse sandy loam, 15 to 50 percent slopes—4 percent

Bakscratch very gravelly coarse sandy loam, dry, 4 to 30 percent slopes—2 percent

Pachic Argicryolls very gravelly coarse sandy loam, 4 to 30 percent slopes—1 percent

Rock outcrop—1 percent

Typic Cryorthents very gravelly loamy coarse sand, 15 to 50 percent slopes—1 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 8 percent slopes—1 percent

Typic Cryorthents very gravelly loamy coarse sand, 15 to 50 percent slopes—1 percent

Component Description

Grandridge and similar soils

Landform: Mountains

Slope: 4 to 30 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Pine needlegrass, bluegrass, low sagebrush, other perennial forbs

Typical profile:

Surface rock fragments: About 3 percent stones, 70 percent gravel, 5 percent cobbles

Layer 1—0 to 1 inch; very gravelly coarse sandy loam

Layer 2—1 to 10 inches; very gravelly sandy clay loam

Layer 3—10 to 18 inches; very gravelly sandy clay loam

Layer 4—18 to 28 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R026XY028NV—Mountain ridge

Component Description

Delhew and similar soils

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from granodiorite

Typical vegetation: Mountain big sagebrush, spike fescue, Letterman needlegrass, bluegrass

Typical profile:

Surface rock fragments: About 22 percent fine gravel, 43 percent gravel, 2 percent cobbles, 2 percent stones

Layer 1—0 to 16 inches; very gravelly loamy coarse sand

Layer 2—16 to 27 inches; very gravelly coarse sandy loam

Layer 3—27 to 40 inches; extremely gravelly coarse sandy loam

Layer 4—40 to 60 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):

Moderately Low, (Permeability class: Very slow)

Available water capacity: About 4 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7e

Ecological site: R026XY075NV—Mountain loam 16+ P.Z.

Component Description

Bullville and similar soils

Landform: South aspects on mountains

Slope: 50 to 75 percent, south aspects

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Western needlegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush, snowberry

Typical profile:

Surface rock fragments: About 20 percent fine gravel, 5 percent cobbles, 10 percent stones, 37 percent gravel
 Layer 1—0 to 10 inches; very gravelly coarse sandy loam
 Layer 2—10 to 15 inches; very gravelly coarse sandy loam
 Layer 3—15 to 30 inches; very gravelly sandy clay loam
 Layer 4—30 to 40 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s
 Ecological site: R026XY110NV—Gravelly south slope 16+ P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Pachic Argicryolls and similar soils

Composition: 0 to 4 percent
 Classification: Loamy-skeletal, mixed, superactive Pachic Argicryolls
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Mountain big sagebrush, other perennial forbs, Letterman needlegrass, sedge
 Ecological site: R026XY076NV—Mountain shoulders

Xeric Haplocryolls and similar soils

Composition: 0 to 4 percent
 Slope: 15 to 50 percent
 Landform: Backslopes of mountains
 Typical vegetation: Letterman needlegrass, prairie junegrass, bluegrass, low sagebrush, other perennial forbs
 Ecological site: R026XY039NV—Claypan 14+ P.Z.

Bakscratch and similar soils

Composition: 0 to 2 percent
 Slope: 4 to 30 percent
 Landform: Backslopes of mountains
 Typical vegetation: Needlegrass, bluegrass, spike fescue, mountain big sagebrush, curlleaf mountainmahogany
 Ecological site: R026XY009NV—Mahogany Savanna

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent
 Classification: Coarse-loamy, mixed, superactive Cumulic Cryaquolls
 Slope: 0 to 8 percent
 Landform: Dissected plains
 Typical vegetation: Tufted hairgrass, bluegrass, sedge, other perennial forbs, other perennial grasses, creeping bentgrass, rush
 Ecological site: R026XY055NV—Dry meadow

Pachic Argicryolls and similar soils

Composition: 0 to 1 percent
 Classification: Loamy-skeletal, mixed, superactive Pachic Argicryolls
 Slope: 4 to 30 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—other perennial forbs, mountain brome, slender wheatgrass, muttongrass, snowberry
 Ecological site: F026XY066NV

Rock outcrop

Composition: 0 to 1 percent
 Landform: Mountains
 Ecological site: None

Typic Cryorthents and similar soils

Composition: 0 to 1 percent
 Classification: Sandy-skeletal, mixed, shallow Typic Cryorthents
 Slope: 15 to 50 percent
 Landform: Shoulders of mountains
 Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Ecological site: R022AY032NV—Alpine ridge

Typic Cryorthents and similar soils

Composition: 0 to 1 percent

Classification: Sandy-skeletal, mixed Typic Cryorthents

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Ecological site: R026XY077NV—Snow pocket

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

810—Corbett-Toiyabe-Rock outcrop complex, 15 to 50 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 5,500 to 8,000

Precipitation: 16 to 30 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 50 to 70 days

Composition

Corbett very bouldery loamy coarse sand, warm, 15 to 50 percent slopes—55 percent

Toiyabe very bouldery loamy coarse sand, 15 to 50 percent slopes—20 percent

Rock outcrop—10 percent

Lockgate very gravelly loamy coarse sand, 15 to 50 percent slopes—4 percent

Granhogany very gravelly loamy coarse sand, 15 to 50 percent slopes—4 percent

Elaero very gravelly loamy coarse sand, 15 to 50 percent slopes—3 percent

Pimogran very gravelly loamy coarse sand, 15 to 50 percent slopes—3 percent

Lostcannon very gravelly coarse sandy loam, 8 to 50 percent slopes—1 percent

Component Description

Corbett and similar soils

Landform: Mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—mountain big sagebrush, currant, snowberry

Site index: Jeffrey pine—70

Typical profile:

Surface rock fragments: About 15 percent boulders, 5 percent stones, 5 percent cobbles, 20 percent gravel

Layer 1—0 to 9 inches; very bouldery loamy coarse sand

Layer 2—9 to 23 inches; gravelly loamy coarse sand

Layer 3—23 to 33 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 1.2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F022AY130NV

Component Description

Toiyabe and similar soils

Landform: Mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Forest canopy—Jeffrey pine Forest understory—mountain big sagebrush, currant, snowberry

Site index: Jeffrey pine—35

Typical profile:

Surface rock fragments: About 20 percent fine gravel, 10 percent gravel, 5 percent cobbles, 5 percent stones, 15 percent boulders

Layer 1—0 to 9 inches; very bouldery loamy coarse sand

Layer 2—9 to 16 inches; gravelly loamy coarse sand

Layer 3—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.9 inch

Present flooding: None

Present ponding: None

Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F022AY130NV

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Granhogany and similar soils

Composition: 0 to 4 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Bluegrass, needlegrass, other perennial forbs, mountain big sagebrush, curlleaf mountainmahogany

Ecological site: R022AY024NV—Mahogany Savanna

Lockgate and similar soils

Composition: 0 to 4 percent

Slope: 15 to 50 percent, north aspect

Landform: North facing mountains

Typical vegetation: Western needlegrass, other perennial forbs, basin wildrye, mountain big sagebrush

Ecological site: R022AY023NV—Loamy slope 16-20 P.Z.

Elaero and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Needlegrass, Indian ricegrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY043NV—South slope 14-16 P.Z.

Pimogran and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush

Ecological site: F026XY044NV

Lostcannon and similar soils

Composition: 0 to 1 percent

Slope: 8 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen

Forest understory—mountain brome, slender wheatgrass, other perennial forbs, snowberry

Ecological site: F022AY103NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

820—Freelpeak-Windyridge-Rock outcrop complex, 15 to 75 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 9,000 to 11,000

Precipitation: 40 to 55 inches

Air temperature: 34 to 37 degrees Fahrenheit

Frost-free period: 20 to 30 days

Composition

Freelpeak gravel, 30 to 75 percent slopes—50 percent

Windyridge very gravelly loamy coarse sand, 15 to 30 percent slopes—25 percent

Rock outcrop—10 percent

Jobsis very gravelly loamy coarse sand, cold, 15 to 50 percent slopes—8 percent

Whittell very cobbly loamy coarse sand, 30 to 75 percent slopes—3 percent

Waterpeak very bouldery coarse sand, 15 to 50 percent slopes—2 percent
 Buggin extremely bouldery loamy coarse sand, moist, 15 to 50 percent slopes—1 percent
 Glaciers—1 percent

Component Description

Freelpeak and similar soils

Landform: North facing backslopes of mountains
 Slope: 30 to 75 percent, north aspect
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Typical profile:

Layer 1—0 to 2 inches; gravel
 Layer 2—2 to 4 inches; extremely gravelly coarse sand
 Layer 3—4 to 8 inches; very gravelly sand
 Layer 4—8 to 36 inches; very cobbly loamy fine sand
 Layer 5—36 to 46 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 2 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 8e-7
 Ecological site: R022AY032NV—Alpine ridge

Component Description

Windyridge and similar soils

Landform: Shoulders and summits of mountains
 Slope: 15 to 30 percent
 Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite
 Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Typical profile:

Surface rock fragments: About 50 percent fine gravel, 5 percent cobbles, 15 percent gravel, 2 percent stones
 Layer 1—0 to 2 inches; very gravelly loamy coarse sand

Layer 2—2 to 10 inches; very gravelly loamy coarse sand

Layer 3—10 to 20 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Depth to restrictive feature: Bedrock (paralithic): 4 to 10 inches
 Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)
 Available water capacity: About 0.4 inch
 Present flooding: None
 Present ponding: None
 Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 8s
 Ecological site: R022AY032NV—Alpine ridge

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Jobsis and similar soils

Composition: 0 to 8 percent
 Slope: 15 to 50 percent
 Landform: Mountains
 Typical vegetation: Bluegrass, other perennial forbs, whitebark pine
 Ecological site: R022AY051NV—Krummholz

Whittell and similar soils

Composition: 0 to 3 percent
 Slope: 30 to 75 percent
 Landform: Mountains
 Typical vegetation: Whitebark pine
 Ecological site: F022AE001CA

Waterpeak and similar soils

Composition: 0 to 2 percent
 Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY021NV—South slope 30+ P.Z.

Buggin and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Backslopes of mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, curlleaf mountainmahogany, snowberry

Ecological site: R022AY025NV—Mahogany thicket

Glaciers

Composition: 0 to 1 percent

Slope: 15 to 75 percent

Landform: Glaciers

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

830—Windyridge-Freelpeak-Rock outcrop complex, 8 to 30 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountains

Elevation: 9,000 to 11,000

Precipitation: 40 to 55 inches

Air temperature: 34 to 37 degrees Fahrenheit

Frost-free period: 20 to 30 days

Composition

Windyridge very gravelly loamy coarse sand, 8 to 30 percent slopes—45 percent

Freelpeak gravel, 15 to 30 percent slopes—25 percent

Rock outcrop—15 percent

Jobsis very gravelly loamy coarse sand, cold, 8 to 30 percent slopes—8 percent

Waterpeak very bouldery coarse sand, 15 to 50 percent slopes—2 percent

Jobsis very gravelly loamy coarse sand, 15 to 50 percent slopes—2 percent

Buggin extremely bouldery loamy coarse sand, moist, 8 to 30 percent slopes—1 percent

Glaciers, 8 to 30 percent slopes—1 percent

Whittell very cobbly loamy coarse sand, 15 to 50 percent slopes—1 percent

Component Description

Windyridge and similar soils

Landform: Shoulders and summits of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Typical profile:

Surface rock fragments: About 50 percent fine gravel, 5 percent cobbles, 15 percent gravel, 2 percent stones

Layer 1—0 to 2 inches; very gravelly loamy coarse sand

Layer 2—2 to 10 inches; very gravelly loamy coarse sand

Layer 3—10 to 20 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 4 to 10 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 0.4 inch

Present flooding: None

Present ponding: None

Natural drainage class: Somewhat excessively drained

Interpretive Groups

Nonirrigated land capability: 8s

Ecological site: R022AY032NV—Alpine ridge

Component Description

Freelpeak and similar soils

Landform: Shoulders and backslopes of mountains

Slope: 15 to 30 percent

Parent material: Colluvium derived from granodiorite over residuum derived from granodiorite

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, other shrubs

Typical profile:

Layer 1—0 to 2 inches; gravel

Layer 2—2 to 4 inches; extremely gravelly coarse sand

Layer 3—4 to 8 inches; very gravelly sand

Layer 4—8 to 36 inches; very cobbly loamy fine sand

Layer 5—36 to 46 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Rapid)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Excessively drained

Interpretive Groups

Nonirrigated land capability: 8e-7

Ecological site: R022AY032NV—Alpine ridge

Component Description

Rock outcrop

Landform: Mountains

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Jobsis and similar soils

Composition: 0 to 8 percent

Slope: 8 to 30 percent

Landform: Mountains

Typical vegetation: Limber pine, bluegrass, other perennial forbs

Ecological site: R022AY051NV—Krummholz

Jobsis and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Forest canopy—limber pine, whitebark pine Forest understory—other perennial forbs

Ecological site: F022AY126NV

Waterpeak and similar soils

Composition: 0 to 2 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Western needlegrass, mountain brome, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY021NV—South slope 30+ P.Z.

Buggin and similar soils

Composition: 0 to 1 percent

Slope: 8 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Needlegrass, bluegrass, other perennial forbs, curlleaf mountainmahogany, snowberry

Ecological site: R022AY025NV—Mahogany thicket

Glaciers

Composition: 0 to 1 percent

Slope: 8 to 30 percent

Landform: Glaciers

Ecological site: None

Whittell and similar soils

Composition: 0 to 1 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Whitebark pine

Ecological site: F022AE001CA

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Forest land" section

"Engineering" and "Soil Properties" sections

840—Lavaspring-Trespas complex, 0 to 4 percent slopes

Map Unit Setting

MLRA: 22A

Landscape: Mountain valleys or canyons

Elevation: 7,000 to 8,500

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Lavaspring mucky ashy loam, 0 to 4 percent slopes—55 percent

Trespas gravelly ashy loam, 0 to 4 percent slopes—25 percent

Lavaspring mucky ashy loam, wet, 0 to 4 percent slopes—10 percent
 Pachic Argixerolls very gravelly coarse sandy loam, 0 to 8 percent slopes—6 percent
 Aquic Haplocryolls very gravelly sandy loam, 0 to 8 percent slopes—3 percent
 Aquic Argicryolls very gravelly sandy loam, 0 to 8 percent slopes—1 percent

Component Description

Lavaspring and similar soils

Landform: Flood plains

Slope: 0 to 4 percent

Parent material: Alluvium from volcanic and metavolcanic rock with additions of volcanic ash

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Typical profile:

Surface rock fragments: About 10 percent gravel

Layer 1—0 to 7 inches; mucky ashy loam

Layer 2—7 to 31 inches; stratified extremely gravelly loamy coarse sand to clay loam

Layer 3—31 to 60 inches; stratified extremely gravelly coarse sandy loam to gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Saturated hydraulic conductivity class (root zone):
 Moderately High, (Permeability class: Moderate)

Available water capacity: About 9 inches

Present flooding: Occasional

Present ponding: None

Water table: Present

Natural drainage class: Poorly drained

Interpretive Groups

Nonirrigated land capability: 5w

Ecological site: R022AY017NV—Semi-wet meadow

Component Description

Trespass and similar soils

Landform: Stream terraces

Slope: 0 to 4 percent

Parent material: Alluvium from volcanic and metavolcanic rock with additions of volcanic ash

Typical vegetation: Mountain silver sagebrush, sedge, mat muhly, bluegrass, other perennial forbs, groundsel

Typical profile:

Surface rock fragments: About 25 percent gravel

Layer 1—0 to 2 inches; gravelly ashy loam

Layer 2—2 to 12 inches; very gravelly ashy sandy clay loam

Layer 3—12 to 35 inches; very gravelly sandy clay loam

Layer 4—35 to 54 inches; very gravelly sandy clay loam

Layer 5—54 to 60 inches; extremely gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Saturated hydraulic conductivity class (root zone):
 Moderately High, (Permeability class: Moderate)

Available water capacity: About 6 inches

Present flooding: Rare

Present ponding: None

Water table: Present

Natural drainage class: Somewhat poorly drained

Interpretive Groups

Nonirrigated land capability: 6w

Ecological site: R022AY054NV—Moist mountain basin

Component Description

Lavaspring and similar soils

Landform: Flood plains

Slope: 0 to 4 percent

Parent material: Alluvium from volcanic and metavolcanic rock with additions of volcanic ash

Typical vegetation: Nebraska sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses

Typical profile:

Surface rock fragments: About 10 percent gravel

Layer 1—0 to 7 inches; mucky ashy loam

Layer 2—7 to 31 inches; stratified extremely gravelly loamy coarse sand to clay loam

Layer 3—31 to 60 inches; stratified extremely gravelly coarse sandy loam to gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Saturated hydraulic conductivity class (root zone):
 Moderately High, (Permeability class: Moderate)
 Available water capacity: About 9 inches
 Present flooding: Occasional
 Present ponding: None
 Water table: Present
 Natural drainage class: Poorly drained

Interpretive Groups

Nonirrigated land capability: 5w
 Ecological site: R022AY016NV—Wet meadow

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Pachic Argixerolls and similar soils**

Composition: 0 to 6 percent
 Classification: Loamy-skeletal, mixed, superactive, frigid
 Pachic Argixerolls
 Slope: 0 to 8 percent
 Landform: Fan remnants
 Typical vegetation: Western needlegrass, Thurber's
 needlegrass, basin wildrye, muttongrass, other
 perennial forbs, mountain big sagebrush, antelope
 bitterbrush
 Ecological site: R022AY022NV—Loamy slope 14-16
 P.Z.

Aquic Haplocryolls and similar soils

Composition: 0 to 3 percent
 Classification: Loamy-skeletal, mixed, superactive Aquic
 Haplocryolls
 Slope: 0 to 8 percent
 Landform: Stream terraces
 Typical vegetation: Creeping wildrye, Woods' rose,
 willow, Kentucky bluegrass
 Ecological site: R022AY015NV—Streambank

Aquic Argicryolls and similar soils

Composition: 0 to 1 percent
 Classification: Loamy-skeletal, mixed, superactive Aquic
 Argicryolls
 Slope: 0 to 8 percent
 Landform: Stream terraces
 Typical vegetation: Forest canopy—quaking aspen
 Forest understory—slender wheatgrass, Nevada
 bluegrass, other perennial forbs, Woods' rose, willow
 Ecological site: F022AY104NV

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Forest land" section
 "Engineering" and "Soil Properties" sections

850—Lunder very gravelly sandy loam, 2 to 8 percent slopes***Map Unit Setting***

MLRA: 26
 Landscape: Fan piedmont
 Elevation: 6,400 to 6,800
 Precipitation: 12 to 14 inches
 Air temperature: 46 to 48 degrees Fahrenheit
 Frost-free period: 80 to 90 days

Composition

Lunder very gravelly sandy loam, 2 to 8 percent
 slopes—90 percent
 Lunder very gravelly sandy loam, 8 to 30 percent
 slopes—5 percent
 Leviathan very stony sandy loam, 15 to 30 percent
 slopes—5 percent

Component Description**Lunder and similar soils**

Landform: Summits of fan remnants
 Slope: 2 to 8 percent
 Parent material: Alluvium derived from basalt or andesite
 Typical vegetation: Thurber needlegrass, low sagebrush,
 bluegrass, other perennial forbs, antelope bitterbrush

Typical profile:

Surface rock fragments: About 40 percent gravel, 2
 percent cobbles
 Layer 1—0 to 7 inches; very gravelly sandy loam
 Layer 2—7 to 17 inches; cobbly clay
 Layer 3—17 to 33 inches; cemented material
 Layer 4—33 to 60 inches; extremely cobbly sandy loam

See "Chemical Properties of Soils" table and the
 "Physical Properties of Soils" table for more
 information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Duripan: 14 to 20 inches

Saturated hydraulic conductivity class (root zone):

Moderately Low, (Permeability class: Slow)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R026XY023NV—Claypan 10-14 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Leviathan and similar soils

Composition: 0 to 5 percent

Slope: 15 to 30 percent

Landform: Backslopes of fan remnants

Typical vegetation: Mountain big sagebrush, other perennial forbs, basin wildrye, muttongrass, antelope bitterbrush, needlegrass

Ecological site: R026XY048NV—Loamy slope 12-14 P.Z.

Lunder and similar soils

Composition: 0 to 5 percent

Slope: 8 to 30 percent

Landform: Shoulders of fan remnants

Typical vegetation: Thurber needlegrass, low sagebrush, bluegrass, other perennial forbs, antelope bitterbrush

Ecological site: R026XY023NV—Claypan 10-14 P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

851—Lunder-Leviathan association

Map Unit Setting

MLRA: 26

Landscape: Fan piedmont

Elevation: 6,400 to 6,800

Precipitation: 12 to 14 inches

Air temperature: 46 to 48 degrees Fahrenheit

Frost-free period: 80 to 90 days

Composition

Lunder very gravelly sandy loam, 4 to 30 percent slopes—50 percent

Leviathan very gravelly sandy loam, 15 to 50 percent slopes—35 percent

Cassiro very stony loam, 15 to 50 percent slopes—9 percent

Shree very gravelly loam, 2 to 8 percent slopes—5 percent

Fluventic Haploxerolls very cobbly sandy loam, 2 to 8 percent slopes—1 percent

Component Description

Lunder and similar soils

Landform: Summits of fan remnants

Slope: 4 to 30 percent

Parent material: Alluvium derived from basalt or andesite

Typical vegetation: Thurber needlegrass, low sagebrush, bluegrass, other perennial forbs, antelope bitterbrush

Typical profile:

Surface rock fragments: About 40 percent gravel, 2 percent cobbles

Layer 1—0 to 7 inches; very gravelly sandy loam

Layer 2—7 to 17 inches; cobbly clay

Layer 3—17 to 33 inches; cemented material

Layer 4—33 to 60 inches; extremely cobbly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Duripan: 14 to 20 inches

Saturated hydraulic conductivity class (root zone):

Moderately Low, (Permeability class: Slow)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R026XY023NV—Claypan 10-14 P.Z.

Component Description

Leviathan and similar soils

Landform: Backslopes of fan remnants

Slope: 15 to 50 percent

Parent material: Alluvium from mixed rock sources

Typical vegetation: Mountain big sagebrush, other perennial forbs, basin wildrye, muttongrass, antelope bitterbrush, needlegrass

Typical profile:

Surface rock fragments: About 45 percent gravel, 15 percent cobbles, 2 percent stones

Layer 1—0 to 10 inches; very gravelly sandy loam

Layer 2—10 to 60 inches; very gravelly clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 6 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R026XY048NV—Loamy slope 12-14 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Cassiro and similar soils**

Composition: 0 to 9 percent

Slope: 15 to 50 percent

Landform: Backslopes of fan remnants

Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, bluegrass, other perennial forbs, antelope bitterbrush

Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Shree and similar soils

Composition: 0 to 5 percent

Slope: 2 to 8 percent

Landform: Fan remnants

Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, bluegrass, other perennial forbs, antelope bitterbrush

Ecological site: R026XY010NV—Loamy 10-12 P.Z.

Fluventic Haploxerolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive, mesic Fluventic Haploxerolls

Slope: 2 to 8 percent

Landform: Stream terraces

Typical vegetation: Sedge, basin wildrye, creeping wildrye, Nevada bluegrass, Woods' rose, yellow willow, silver buffaloberry

Ecological site: R026XY073NV—Streambank

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Crops and Pasture" section

"Engineering" and "Soil Properties" sections

860—Hardnut-Ocashe association***Map Unit Setting***

MLRA: 26

Landscape: Mountains

Elevation: 6,500 to 8,000

Precipitation: 12 to 14 inches

Air temperature: 43 to 45 degrees Fahrenheit

Frost-free period: 70 to 90 days

Composition

Hardnut very gravelly ashy sandy loam, 30 to 75 percent slopes—55 percent

Ocashe extremely gravelly ashy sandy loam, 30 to 75 percent slopes—30 percent

Vitritorrandic Haploxerolls very gravelly ashy loam, 15 to 50 percent slopes—5 percent

Rock outcrop—3 percent

Vetash very gravelly ashy sandy loam, 15 to 50 percent slopes—3 percent

Smallcone very gravelly coarse sandy loam, 15 to 50 percent slopes—1 percent

Fluventic Haploxerolls very cobbly sandy loam, 2 to 8 percent slopes—1 percent

Lithic Argixerolls extremely bouldery sandy loam, 8 to 30 percent slopes—1 percent

Vitritorrandic Durixerolls very gravelly ashy sandy loam, 2 to 8 percent slopes—1 percent

Component Description**Hardnut and similar soils**

Landform: Mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush

Site index: Singleleaf pinyon—75 at an age base of 0 years

Typical profile:

Surface rock fragments: About 50 percent gravel, 20 percent cobbles, 5 percent stones

Layer 1—0 to 3 inches; very gravelly ashy sandy loam

Layer 2—3 to 8 inches; extremely gravelly ashy sandy clay loam

Layer 3—8 to 15 inches; extremely gravelly ashy sandy clay loam

Layer 4—15 to 25 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F026XY044NV

Component Description

Ocashe and similar soils

Landform: Mountains

Slope: 30 to 75 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush

Site index: Singleleaf pinyon—75 at an age base of 0 years

Typical profile:

Surface rock fragments: About 50 percent gravel, 5 percent cobbles, 5 percent stones

Layer 1—0 to 3 inches; extremely gravelly ashy sandy loam

Layer 2—3 to 7 inches; extremely gravelly ashy sandy clay loam

Layer 3—7 to 13 inches; extremely gravelly ashy sandy clay loam

Layer 4—13 to 23 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 7 to 14 inches

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: F026XY044NV

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Vitritorrandic Haploxerolls and similar soils

Composition: 0 to 5 percent

Classification: Loamy-skeletal, mixed, superactive, frigid

Vitritorrandic Haploxerolls

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Mountain big sagebrush, other perennial forbs, basin wildrye, muttongrass, antelope bitterbrush, needlegrass

Ecological site: R026XY048NV—Loamy slope 12-14 P.Z.

Rock outcrop

Composition: 0 to 3 percent

Landform: Mountains

Ecological site: None

Vetash and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Western needlegrass, prairie junegrass, basin wildrye, mountain big sagebrush, antelope bitterbrush, snowberry

Ecological site: R026XY105NV—Gravelly loamy slope
14-16 P.Z.

Fluventic Haploxerolls and similar soils

Composition: 0 to 1 percent
Classification: Loamy-skeletal, mixed, superactive, mesic Fluventic Haploxerolls
Slope: 2 to 8 percent
Landform: Stream terraces
Typical vegetation: Sedge, basin wildrye, creeping wildrye, Nevada bluegrass, Woods' rose, yellow willow, silver buffaloberry
Ecological site: R026XY073NV—Streambank

Lithic Argixerolls and similar soils

Composition: 0 to 1 percent
Classification: Loamy-skeletal, mixed, superactive, frigid Lithic Argixerolls
Slope: 8 to 30 percent
Landform: Shoulders of mountains
Typical vegetation: Needlegrass, bluegrass, spike fescue, mountain big sagebrush, curleaf mountainmahogany
Ecological site: R026XY009NV—Mahogany Savanna

Smallcone and similar soils

Composition: 0 to 1 percent
Slope: 15 to 50 percent
Landform: Mountains
Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs
Ecological site: F026XY065NV

Vitritorrandic Durixerolls and similar soils

Composition: 0 to 1 percent
Classification: Clayey, smectitic, mesic Vitritorrandic Durixerolls
Slope: 2 to 8 percent
Landform: Summits of fan remnants
Typical vegetation: Thurber needlegrass, low sagebrush, bluegrass, other perennial forbs, antelope bitterbrush
Ecological site: R026XY023NV—Claypan 10-14 P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
"Range" section
"Forest land" section
"Engineering" and "Soil Properties" sections

870—Evpip-Domehill-Ashflat association

Map Unit Setting

MLRA: 26
Landscape: Mountains
Elevation: 8,000 to 8,800
Precipitation: 14 to 16 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 70 days

Composition

Evpip very gravelly ashy sandy loam, 8 to 30 percent slopes—40 percent
Domehill very gravelly ashy sandy loam, 4 to 30 percent slopes—30 percent
Ashflat gravelly ashy sandy loam, 4 to 15 percent slopes—15 percent
Masonic very gravelly ashy fine sandy loam, 4 to 30 percent slopes—5 percent
Hardnut very gravelly ashy sandy loam, 30 to 75 percent slopes—3 percent
Rock outcrop—2 percent
Vitrandic Haplocryalfs very gravelly ashy fine sandy loam, 30 to 50 percent slopes—2 percent
Lithic Argixerolls very gravelly ashy sandy loam, 30 to 50 percent slopes—2 percent
Aquandic Cryaquolls ashy very fine sandy loam, 0 to 8 percent slopes—1 percent

Component Description

Evpip and similar soils

Landform: Backslopes of mountains
Slope: 8 to 30 percent
Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash
Typical vegetation: Western needlegrass, prairie junegrass, basin wildrye, mountain big sagebrush, antelope bitterbrush, snowberry

Typical profile:

Surface rock fragments: About 50 percent gravel, 5 percent cobbles, 2 percent stones
Layer 1—0 to 4 inches; very gravelly ashy sandy loam
Layer 2—4 to 16 inches; very gravelly ashy sandy clay loam
Layer 3—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R026XY105NV—Gravelly loamy slope 14-16 P.Z.

Component Description

Domehill and similar soils

Landform: Mountains

Slope: 4 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash

Typical vegetation: Thurber needlegrass, low sagebrush, prairie junegrass, bluegrass

Typical profile:

Surface rock fragments: About 35 percent gravel, 10 percent cobbles, 2 percent stones

Layer 1—0 to 2 inches; very gravelly ashy sandy loam

Layer 2—2 to 8 inches; very gravelly ashy loam

Layer 3—8 to 13 inches; very gravelly ashy clay loam

Layer 4—13 to 23 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 7 to 14 inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderate)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R026XY078NV—Claypan 12-14 P.Z.

Component Description

Ashflat and similar soils

Landform: Mountain slopes

Slope: 4 to 15 percent

Parent material: Colluvium derived from volcanic rocks with additions of volcanic ash

Typical vegetation: Western needlegrass, sedge, mountain big sagebrush, other perennial forbs, basin wildrye

Typical profile:

Surface rock fragments: About 30 percent gravel, 5 percent cobbles, 1 percent stones

Layer 1—0 to 7 inches; gravelly ashy sandy loam

Layer 2—7 to 43 inches; very gravelly ashy loam

Layer 3—43 to 60 inches; very gravelly ashy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 10 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6e

Ecological site: R026XY108NV—Ashy slope 14-16 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Masonic and similar soils

Composition: 0 to 5 percent

Slope: 4 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, prairie junegrass, basin wildrye, mountain big sagebrush, antelope bitterbrush, snowberry

Ecological site: R026XY105NV—Gravelly loamy slope 14-16 P.Z.

Hardnut and similar soils

Composition: 0 to 3 percent

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—needlegrass, muttongrass,
mountain big sagebrush, currant, snowberry,
antelope bitterbrush

Ecological site: F026XY044NV

Lithic Argixerolls and similar soils

Composition: 0 to 2 percent

Classification: Ashy-skeletal, glassy, frigid Lithic
Argixerolls

Slope: 30 to 50 percent, south aspect

Landform: South facing mountains

Typical vegetation: Needlegrass, Indian ricegrass,
mountain big sagebrush, antelope bitterbrush

Ecological site: R026XY106NV—South slope 14-16 P.Z.

Rock outcrop

Composition: 0 to 2 percent

Landform: Mountains

Ecological site: None

Vitrandic Haplocryalfs and similar soils

Composition: 0 to 2 percent

Classification: Ashy-skeletal, glassy Vitrandic
Haploxeralfs

Slope: 30 to 50 percent, north aspect

Landform: North facing backslopes of mountains

Typical vegetation: Mountain big sagebrush, other
perennial forbs, sedge, western needlegrass,
snowberry

Ecological site: R026XY112NV—Ashy pocket

Aquandic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Ashy, glassy Aquandic Cryaquolls

Slope: 0 to 8 percent

Landform: Stream terraces

Typical vegetation: Sedge, tufted hairgrass, meadow
barley, rush, bluegrass, other perennial forbs

Ecological site: R026XY054NV—Wet meadow 14+ P.Z.

Management

For information about managing this map unit, see the
following sections and associated tables in this
publication:

"Range" section

"Engineering" and "Soil Properties" sections

871—Halfash-Domehill association

Map Unit Setting

MLRA: 26

Landscape: Mountains

Elevation: 8,000 to 8,800

Precipitation: 12 to 14 inches

Air temperature: 43 to 45 degrees Fahrenheit

Frost-free period: 60 to 70 days

Composition

Halfash very gravelly ashy sandy loam, 8 to 30 percent
slopes—50 percent

Domehill very gravelly ashy sandy loam, 4 to 30 percent
slopes—35 percent

Vitrandic Argixerolls very gravelly ashy sandy loam, 8 to
30 percent slopes—6 percent

Vitrandic Palexerolls very gravelly ashy fine sandy loam,
0 to 8 percent slopes—4 percent

Rock outcrop—2 percent

Vitrandic Haplocryalfs very gravelly ashy fine sandy
loam, 30 to 50 percent slopes—2 percent

Vitritorrandic Haploxerolls ashy very fine sandy loam, 0
to 8 percent slopes—1 percent

Component Description

Halfash and similar soils

Landform: Mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff
breccia over residuum derived from andesite or tuff
breccia with additions of volcanic ash

Typical vegetation: Thurber's needlegrass, bluegrass,
prairie junegrass, mountain big sagebrush, other
perennial forbs, antelope bitterbrush

Typical profile:

Surface rock fragments: About 30 percent gravel, 15
percent cobbles, 5 percent stones

Layer 1—0 to 3 inches; very gravelly ashy sandy loam

Layer 2—3 to 8 inches; very gravelly ashy loam

Layer 3—8 to 17 inches; very gravelly ashy clay loam

Layer 4—17 to 27 inches; bedrock

See "Chemical Properties of Soils" table and the
"Physical Properties of Soils" table for more
information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 14 to 20
inches

Saturated hydraulic conductivity class (root zone):
Moderately High, (Permeability class: Moderately
slow)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R026XY111NV—Shallow loam 12-14 P.Z.

Component Description

Domehill and similar soils

Landform: Mountains

Slope: 4 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash

Typical vegetation: Thurber needlegrass, low sagebrush, prairie junegrass, bluegrass

Typical profile:

Surface rock fragments: About 35 percent gravel, 2 percent stones, 10 percent cobbles

Layer 1—0 to 2 inches; very gravelly ashy sandy loam

Layer 2—2 to 8 inches; very gravelly ashy loam

Layer 3—8 to 13 inches; very gravelly ashy clay loam

Layer 4—13 to 23 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 7 to 14 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R026XY078NV—Claypan 12-14 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Vitrantic Argixerolls and similar soils

Composition: 0 to 6 percent

Classification: Ashy-skeletal, glassy, frigid, shallow Vitrantic Argixerolls

Slope: 8 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, prairie junegrass, basin wildrye, mountain big sagebrush, antelope bitterbrush, snowberry

Ecological site: R026XY105NV—Gravelly loamy slope 14-16 P.Z.

Vitrantic Palexerolls and similar soils

Composition: 0 to 4 percent

Classification: Clayey, smectitic, frigid Vitrantic Palexerolls

Slope: 0 to 8 percent

Landform: Toeslopes of mountains

Typical vegetation: Thurber needlegrass, low sagebrush, prairie junegrass, bluegrass

Ecological site: R026XY078NV—Claypan 12-14 P.Z.

Rock outcrop

Composition: 0 to 2 percent

Landform: Mountains

Ecological site: None

Vitrantic Haplocryalfs and similar soils

Composition: 0 to 2 percent

Classification: Ashy-skeletal, glassy Vitrantic Haplocryalfs

Slope: 30 to 50 percent, north aspect

Landform: North facing backslopes of mountains

Typical vegetation: Western needlegrass, sedge, other perennial forbs, snowberry, mountain big sagebrush

Ecological site: R026XY112NV—Ashy pocket

Vitritorrandic Haploxerolls and similar soils

Composition: 0 to 1 percent

Classification: Ashy, glassy, frigid Vitritorrandic Haploxerolls

Slope: 0 to 8 percent

Landform: Stream terraces

Typical vegetation: Mat muhly, other perennial forbs, needlegrass, silver sagebrush, bluegrass

Ecological site: R026XY049NV—Mountain basin

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

872—Evpip-Vetash association

Map Unit Setting

MLRA: 26

Landscape: Mountains
 Elevation: 7,600 to 8,400
 Precipitation: 14 to 16 inches
 Air temperature: 43 to 45 degrees Fahrenheit
 Frost-free period: 50 to 70 days

Composition

Epvip very gravelly ashy sandy loam, 15 to 50 percent slopes—40 percent
 Vetash very gravelly ashy sandy loam, 15 to 50 percent slopes—25 percent
 Epvip very gravelly ashy sandy loam, warm, 15 to 50 percent slopes—20 percent
 Hardnut very gravelly ashy sandy loam, 30 to 75 percent slopes—6 percent
 Domehill very gravelly ashy sandy loam, 4 to 15 percent slopes—5 percent
 Vitrandic Argicryolls gravelly ashy sandy loam, 4 to 30 percent slopes—1 percent
 Rock outcrop—1 percent
 Fluventic Haploxerolls very cobbly sandy loam, 2 to 8 percent slopes—1 percent
 Vitritorrandic Argixerolls very gravelly ashy sandy loam, 4 to 30 percent slopes—1 percent

Component Description

Epvip and similar soils

Landform: Backslopes of mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash
 Typical vegetation: Western needlegrass, prairie junegrass, basin wildrye, mountain big sagebrush, antelope bitterbrush, snowberry

Typical profile:

Surface rock fragments: About 50 percent gravel, 5 percent cobbles, 2 percent stones
 Layer 1—0 to 4 inches; very gravelly ashy sandy loam
 Layer 2—4 to 16 inches; very gravelly ashy sandy clay loam
 Layer 3—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)
 Available water capacity: About 3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R026XY105NV—Gravelly loamy slope 14-16 P.Z.

Component Description

Vetash and similar soils

Landform: Mountains
 Slope: 15 to 50 percent
 Parent material: Colluvium derived from volcanic rocks with additions of volcanic ash
 Typical vegetation: Western needlegrass, prairie junegrass, basin wildrye, mountain big sagebrush, antelope bitterbrush, snowberry

Typical profile:

Surface rock fragments: About 40 percent gravel
 Layer 1—0 to 9 inches; very gravelly ashy sandy loam
 Layer 2—9 to 30 inches; very gravelly ashy sandy clay loam
 Layer 3—30 to 46 inches; very gravelly ashy sandy clay loam
 Layer 4—46 to 60 inches; very gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High
 Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches
 Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)
 Available water capacity: About 9 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R026XY105NV—Gravelly loamy slope 14-16 P.Z.

Component Description

Epvip and similar soils

Landform: East to west aspects on backslopes of mountains

Slope: 15 to 50 percent, east to west aspects

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash

Typical vegetation: Needlegrass, Indian ricegrass, mountain big sagebrush, antelope bitterbrush

Typical profile:

Surface rock fragments: About 50 percent gravel, 5 percent cobbles, 2 percent stones

Layer 1—0 to 4 inches; very gravelly ashy sandy loam

Layer 2—4 to 16 inches; very gravelly ashy sandy clay loam

Layer 3—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6e

Ecological site: R026XY106NV—South slope 14-16 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Hardnut and similar soils

Composition: 0 to 6 percent

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Forest canopy—singleleaf pinyon
Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush

Ecological site: F026XY044NV

Domehill and similar soils

Composition: 0 to 5 percent

Slope: 4 to 15 percent

Landform: Mountains

Typical vegetation: Prairie junegrass, low sagebrush, Thurber needlegrass, bluegrass

Ecological site: R026XY078NV—Claypan 12-14 P.Z.

Fluventic Haploxerolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive, mesic Fluventic Haploxerolls

Slope: 2 to 8 percent

Landform: Stream terraces

Typical vegetation: Sedge, basin wildrye, creeping wildrye, Nevada bluegrass, Woods' rose, yellow willow, silver buffaloberry

Ecological site: R026XY073NV—Streambank

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Vitrandid Argicryolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive
Vitrandid Argicryolls

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Forest canopy—quaking aspen
Forest understory—other perennial forbs, mountain brome, slender wheatgrass, muttongrass, snowberry

Ecological site: F026XY066NV

Vitritorrandic Argixerolls and similar soils

Composition: 0 to 1 percent

Classification: Ashy-skeletal, glassy, frigid Vitritorrandic Argixerolls

Slope: 4 to 30 percent

Landform: Footslopes of mountains

Typical vegetation: Antelope bitterbrush, basin wildrye, mountain big sagebrush, muttongrass, mountain brome, needlegrass

Ecological site: R026XY005NV—Loamy 12-14 P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

873—Epvip-Hardnut-Vetash association***Map Unit Setting***

MLRA: 26

Landscape: Mountains

Elevation: 7,600 to 8,400

Precipitation: 14 to 16 inches

Air temperature: 43 to 45 degrees Fahrenheit

Frost-free period: 50 to 70 days

Composition

Epvip very gravelly ashy sandy loam, 4 to 30 percent slopes—35 percent

Hardnut very gravelly ashy sandy loam, 15 to 50 percent slopes—35 percent

Vetash very gravelly ashy sandy loam, 15 to 50 percent slopes—15 percent

Lithic Argixerolls very gravelly ashy sandy loam, 30 to 50 percent slopes—5 percent

Ocashe extremely gravelly ashy sandy loam, 30 to 75 percent slopes—5 percent

Domehill very gravelly ashy sandy loam, 4 to 30 percent slopes—3 percent

Rock outcrop—1 percent

Fluventic Haploxerolls very cobbly sandy loam, 2 to 15 percent slopes—1 percent

Component Description**Epvip and similar soils**

Landform: Backslopes of mountains

Slope: 4 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash

Typical vegetation: Western needlegrass, prairie junegrass, basin wildrye, mountain big sagebrush, antelope bitterbrush, snowberry

Typical profile:

Surface rock fragments: About 50 percent gravel, 5 percent cobbles, 2 percent stones

Layer 1—0 to 4 inches; very gravelly ashy sandy loam

Layer 2—4 to 16 inches; very gravelly ashy sandy clay loam

Layer 3—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R026XY105NV—Gravelly loamy slope 14-16 P.Z.

Component Description**Hardnut and similar soils**

Landform: Backslopes of mountains

Slope: 15 to 50 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush

Site index: Singleleaf pinyon—75 at an age base of 0 years

Typical profile:

Surface rock fragments: About 50 percent gravel, 20 percent cobbles, 5 percent stones

Layer 1—0 to 3 inches; very gravelly ashy sandy loam

Layer 2—3 to 8 inches; extremely gravelly ashy sandy clay loam

Layer 3—8 to 15 inches; extremely gravelly ashy sandy clay loam

Layer 4—15 to 25 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: F026XY044NV

Component Description

Vetash and similar soils

Landform: North facing backslopes of mountains

Slope: 15 to 50 percent, north aspect

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash

Typical vegetation: Western needlegrass, prairie junegrass, basin wildrye, mountain big sagebrush, antelope bitterbrush, snowberry

Typical profile:

Surface rock fragments: About 40 percent gravel

Layer 1—0 to 9 inches; very gravelly ashy sandy loam

Layer 2—9 to 30 inches; very gravelly ashy sandy clay loam

Layer 3—30 to 46 inches; very gravelly ashy sandy clay loam

Layer 4—46 to 60 inches; very gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 9 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R026XY105NV—Gravelly loamy slope 14-16 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Lithic Argixerolls and similar soils

Composition: 0 to 5 percent

Classification: Ashy-skeletal, glassy, frigid Lithic Argixerolls

Slope: 30 to 50 percent, south aspect

Landform: South facing mountains

Typical vegetation: Needlegrass, Indian ricegrass, mountain big sagebrush, antelope bitterbrush

Ecological site: R026XY106NV—South slope 14-16 P.Z.

Ocashe and similar soils

Composition: 0 to 5 percent

Slope: 30 to 75 percent

Landform: Mountains

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush

Ecological site: F026XY044NV

Domehill and similar soils

Composition: 0 to 3 percent

Slope: 4 to 30 percent

Landform: Mountains

Typical vegetation: Thurber needlegrass, low sagebrush, prairie junegrass, bluegrass

Ecological site: R026XY078NV—Claypan 12-14 P.Z.

Fluventic Haploxerolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive, frigid Fluventic Haploxerolls

Slope: 2 to 15 percent

Landform: Stream terraces

Typical vegetation: Sedge, basin wildrye, creeping wildrye, Nevada bluegrass, Woods' rose, yellow willow, silver buffaloberry

Ecological site: R026XY073NV—Streambank

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Crops and Pasture" section

"Engineering" and "Soil Properties" sections

880—Mopana very gravelly ashy fine sandy loam, 0 to 8 percent slopes

Map Unit Setting

MLRA: 26
 Landscape: Plateau
 Elevation: 7,600 to 8,200
 Precipitation: 12 to 14 inches
 Air temperature: 41 to 43 degrees Fahrenheit
 Frost-free period: 60 to 70 days

Composition

Mopana very gravelly ashy fine sandy loam, 0 to 8 percent slopes—90 percent
 Vitritorrandic Durixerolls very gravelly ashy fine sandy loam, 0 to 8 percent slopes—4 percent
 Halfash very gravelly ashy sandy loam, 8 to 30 percent slopes—4 percent
 Rock outcrop—2 percent

Component Description

Mopana and similar soils

Landform: Summits of plateaus
 Slope: 0 to 8 percent
 Parent material: Residuum derived from basalt with additions of volcanic ash
 Typical vegetation: Thurber needlegrass, low sagebrush, prairie junegrass, bluegrass

Typical profile:

Surface rock fragments: About 2 percent fine gravel, 30 percent gravel, 5 percent cobbles, 4 percent stones
 Layer 1—0 to 5 inches; very gravelly ashy fine sandy loam
 Layer 2—5 to 9 inches; gravelly ashy loam
 Layer 3—9 to 19 inches; clay
 Layer 4—19 to 60 inches; cemented material

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Duripan: 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): Low, (Permeability class: Very slow)
 Available water capacity: About 3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R026XY078NV—Claypan 12-14 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Halfash and similar soils

Composition: 0 to 4 percent
 Slope: 8 to 30 percent
 Landform: Shoulders of plateaus
 Typical vegetation: Antelope bitterbrush, other perennial forbs, mountain big sagebrush, prairie junegrass, bluegrass, Thurber's needlegrass
 Ecological site: R026XY111NV—Shallow loam 12-14 P.Z.

Vitritorrandic Durixerolls and similar soils

Composition: 0 to 4 percent
 Classification: Clayey, smectitic, frigid, shallow
 Vitritorrandic Durixerolls
 Slope: 0 to 8 percent
 Landform: Plateaus
 Typical vegetation: Antelope bitterbrush, other perennial forbs, Thurber's needlegrass, bluegrass, prairie junegrass, mountain big sagebrush
 Ecological site: R026XY111NV—Shallow loam 12-14 P.Z.

Rock outcrop

Composition: 0 to 2 percent
 Landform: Mountains
 Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Engineering" and "Soil Properties" sections

890—Masonic-Epvip-Domehill association

Map Unit Setting

MLRA: 26
 Landscape: Mountains
 Elevation: 7,200 to 8,000
 Precipitation: 14 to 16 inches

Air temperature: 43 to 45 degrees Fahrenheit

Frost-free period: 60 to 70 days

Composition

Masonic very gravelly ashy fine sandy loam, 8 to 30 percent slopes—40 percent

Epvip very gravelly ashy sandy loam, 8 to 30 percent slopes—30 percent

Domehill very gravelly ashy sandy loam, 4 to 15 percent slopes—15 percent

Hardnut very gravelly ashy sandy loam, 30 to 75 percent slopes—5 percent

Vetash very gravelly ashy sandy loam, 15 to 50 percent slopes—5 percent

Halfash very gravelly ashy sandy loam, 8 to 30 percent slopes—2 percent

Vitrandic Palexerolls very gravelly ashy fine sandy loam, 4 to 15 percent slopes—2 percent

Rock outcrop—1 percent

Component Description

Masonic and similar soils

Landform: Backslopes of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash

Typical vegetation: Western needlegrass, prairie junegrass, basin wildrye, mountain big sagebrush, antelope bitterbrush, snowberry

Typical profile:

Surface rock fragments: About 30 percent subrounded gravel, 10 percent subrounded cobbles, 5 percent subrounded stones, 2 percent subrounded boulders

Layer 1—0 to 4 inches; very gravelly ashy fine sandy loam

Layer 2—4 to 7 inches; very gravelly ashy loam

Layer 3—7 to 10 inches; extremely gravelly ashy clay loam

Layer 4—10 to 21 inches; extremely cobbly clay loam

Layer 5—21 to 31 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R026XY105NV—Gravelly loamy slope 14-16 P.Z.

Component Description

Epvip and similar soils

Landform: Backslopes of mountains

Slope: 8 to 30 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash

Typical vegetation: Western needlegrass, prairie junegrass, basin wildrye, mountain big sagebrush, antelope bitterbrush, snowberry

Typical profile:

Surface rock fragments: About 50 percent gravel, 5 percent cobbles, 2 percent stones

Layer 1—0 to 4 inches; very gravelly ashy sandy loam

Layer 2—4 to 16 inches; very gravelly ashy sandy clay loam

Layer 3—16 to 26 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Medium

Depth to restrictive feature: Bedrock (paralithic): 14 to 20 inches

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderately slow)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6e

Ecological site: R026XY105NV—Gravelly loamy slope 14-16 P.Z.

Component Description

Domehill and similar soils

Landform: Mountains

Slope: 4 to 15 percent

Parent material: Colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia with additions of volcanic ash

Typical vegetation: Thurber needlegrass, low sagebrush, prairie junegrass, bluegrass

Typical profile:

Surface rock fragments: About 35 percent gravel, 2 percent stones, 10 percent cobbles

Layer 1—0 to 2 inches; very gravelly ashy sandy loam

Layer 2—2 to 8 inches; very gravelly ashy loam

Layer 3—8 to 13 inches; very gravelly ashy clay loam

Layer 4—13 to 23 inches; bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Bedrock (lithic): 7 to 14 inches

Saturated hydraulic conductivity class (root zone): Moderately High, (Permeability class: Moderate)

Available water capacity: About 2 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R026XY078NV—Claypan 12-14 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Hardnut and similar soils

Composition: 0 to 5 percent

Slope: 30 to 75 percent

Landform: Backslopes of mountains

Typical vegetation: Forest canopy—singleleaf pinyon

Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush

Ecological site: F026XY044NV

Vetash and similar soils

Composition: 0 to 5 percent

Slope: 15 to 50 percent, north aspect

Landform: North facing backslopes of mountains

Typical vegetation: Western needlegrass, prairie junegrass, basin wildrye, mountain big sagebrush, antelope bitterbrush, snowberry

Ecological site: R026XY105NV—Gravelly loamy slope 14-16 P.Z.

Halfash and similar soils

Composition: 0 to 2 percent

Slope: 8 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Thurber's needlegrass, bluegrass, prairie junegrass, mountain big sagebrush, other perennial forbs, antelope bitterbrush

Ecological site: R026XY111NV—Shallow loam 12-14 P.Z.

Vitrantic Palexerolls and similar soils

Composition: 0 to 2 percent

Classification: Clayey, smectitic, frigid Vitrantic Palexerolls

Slope: 4 to 15 percent

Landform: Summits of mountains

Typical vegetation: Thurber needlegrass, low sagebrush, prairie junegrass, bluegrass

Ecological site: R026XY078NV—Claypan 12-14 P.Z.

Rock outcrop

Composition: 0 to 1 percent

Landform: Mountains

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

900—Brokenhoe-Fisherdig association

Map Unit Setting

MLRA: 26

Landscape: Fan piedmont

Elevation: 6,600 to 7,400

Precipitation: 12 to 14 inches

Air temperature: 43 to 45 degrees Fahrenheit

Frost-free period: 50 to 70 days

Composition

Brokenhoe very cobbly ashy sandy loam, 4 to 30 percent slopes—60 percent

Fisherdig very gravelly ashy sandy loam, 2 to 8 percent slopes—25 percent
 Hardnut very gravelly ashy sandy loam, 30 to 75 percent slopes—5 percent
 Masonic very gravelly ashy fine sandy loam, 8 to 30 percent slopes—3 percent
 Vetash very gravelly ashy sandy loam, 15 to 50 percent slopes—3 percent
 Domehill very gravelly ashy sandy loam, 2 to 8 percent slopes—3 percent
 Fluventic Haploxerolls very cobbly sandy loam, 2 to 8 percent slopes—1 percent

Component Description

Brokenhoe and similar soils

Landform: Fan remnants
 Slope: 4 to 30 percent
 Parent material: Alluvium from volcanic rocks with additions of volcanic ash
 Typical vegetation: Other perennial forbs, western needlegrass, antelope bitterbrush, mountain big sagebrush, prairie junegrass, basin wildrye

Typical profile:

Surface rock fragments: About 25 percent gravel, 3 percent boulders, 10 percent cobbles, 5 percent stones
 Layer 1—0 to 6 inches; very cobbly ashy sandy loam
 Layer 2—6 to 10 inches; very gravelly ashy sandy clay loam
 Layer 3—10 to 20 inches; very cobbly clay loam
 Layer 4—20 to 37 inches; cemented material
 Layer 5—37 to 60 inches; cemented extremely stony sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Duripan: 20 to 40 inches
 Saturated hydraulic conductivity class (root zone): Moderately Low, (Permeability class: Slow)
 Available water capacity: About 3 inches
 Present flooding: None
 Present ponding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R026XY105NV—Gravelly loamy slope 14-16 P.Z.

Component Description

Fisherdig and similar soils

Landform: Fan remnants
 Slope: 2 to 8 percent
 Parent material: Alluvium from volcanic rocks with additions of volcanic ash
 Typical vegetation: Thurber's needlegrass, prairie junegrass, low sagebrush, other perennial forbs

Typical profile:

Layer 1—0 to 5 inches; very gravelly ashy sandy loam
 Layer 2—5 to 8 inches; very gravelly ashy clay loam
 Layer 3—8 to 19 inches; very cobbly clay
 Layer 4—19 to 46 inches; cemented material
 Layer 5—46 to 60 inches; cemented extremely gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high
 Depth to restrictive feature: Duripan: 14 to 20 inches
 Saturated hydraulic conductivity class (root zone): Moderately Low, (Permeability class: Slow)
 Available water capacity: About 2 inches
 Present flooding: None
 Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s
 Ecological site: R026XY078NV—Claypan 12-14 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Hardnut and similar soils

Composition: 0 to 5 percent
 Slope: 30 to 75 percent
 Landform: Mountains
 Typical vegetation: Forest canopy—singleleaf pinyon
 Forest understory—needlegrass, muttongrass, mountain big sagebrush, currant, snowberry, antelope bitterbrush
 Ecological site: F026XY044NV

Domehill and similar soils

Composition: 0 to 3 percent
 Slope: 2 to 8 percent

Landform: Mountains

Typical vegetation: Low sagebrush, prairie junegrass, bluegrass, Thurber needlegrass

Ecological site: R026XY078NV—Claypan 12-14 P.Z.

Masonic and similar soils

Composition: 0 to 3 percent

Slope: 8 to 30 percent

Landform: Backslopes of mountains

Typical vegetation: Western needlegrass, prairie junegrass, basin wildrye, mountain big sagebrush, antelope bitterbrush, snowberry

Ecological site: R026XY105NV—Gravelly loamy slope 14-16 P.Z.

Vetash and similar soils

Composition: 0 to 3 percent

Slope: 15 to 50 percent

Landform: Mountains

Typical vegetation: Western needlegrass, prairie junegrass, basin wildrye, mountain big sagebrush, antelope bitterbrush, snowberry

Ecological site: R026XY105NV—Gravelly loamy slope 14-16 P.Z.

Fluventic Haploxerolls and similar soils

Composition: 0 to 1 percent

Classification: Loamy-skeletal, mixed, superactive, mesic Fluventic Haploxerolls

Slope: 2 to 8 percent

Landform: Stream terraces

Typical vegetation: Sedge, basin wildrye, creeping wildrye, Nevada bluegrass, Woods' rose, yellow willow, silver buffaloberry

Ecological site: R026XY073NV—Streambank

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

910—Indian Creek-Haybourne association

Map Unit Setting

MLRA: 26

Landscape: Fan piedmont

Elevation: 4,500 to 6,000

Precipitation: 8 to 12 inches

Air temperature: 48 to 52 degrees Fahrenheit

Frost-free period: 80 to 100 days

Composition

Indian Creek very gravelly fine sandy loam, 2 to 8 percent slopes—60 percent

Haybourne gravelly sandy loam, 0 to 4 percent slopes—25 percent

Eastval gravelly sandy loam, 2 to 8 percent slopes—5 percent

Chalco gravelly fine sandy loam, 8 to 15 percent slopes—5 percent

Nevador fine sandy loam, 2 to 8 percent slopes—5 percent

Component Description

Indian Creek and similar soils

Landform: Summits of fan remnants

Slope: 2 to 8 percent

Parent material: Alluvium from mixed rock sources

Typical vegetation: Indian ricegrass, Thurber needlegrass, Sandberg bluegrass, other perennial forbs, low sagebrush

Typical profile:

Surface rock fragments: About 25 percent gravel, 20 percent cobbles

Layer 1—0 to 1 inch; very gravelly fine sandy loam

Layer 2—1 to 3 inches; gravelly loam

Layer 3—3 to 20 inches; gravelly clay

Layer 4—20 to 25 inches; cemented material

Layer 5—25 to 60 inches; stratified extremely gravelly loamy coarse sand to gravelly sandy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Depth to restrictive feature: Duripan: 14 to 20 inches

Saturated hydraulic conductivity class (root zone): Low, (Permeability class: Very slow)

Available water capacity: About 3 inches

Present flooding: None

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 6s

Ecological site: R026XY025NV—Claypan 8-10 P.Z.

Component Description**Haybourne and similar soils**

Landform: inset fans

Slope: 0 to 4 percent

Parent material: Alluvium from mixed rock sources

Typical vegetation: Desert needlegrass, Thurber needlegrass, Indian ricegrass, Wyoming big sagebrush, ephedra, other perennial forbs

Typical profile:

Surface rock fragments: About 25 percent gravel, 2 percent cobbles

Layer 1—0 to 5 inches; gravelly sandy loam

Layer 2—5 to 20 inches; sandy loam

Layer 3—20 to 60 inches; stratified gravelly coarse sand to fine sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: Rare

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Irrigated land capability: 3e

Nonirrigated land capability: 6e

Ecological site: R026XY016NV—Loamy 8-10 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Chalco and similar soils**

Composition: 0 to 5 percent

Slope: 8 to 15 percent

Landform: Hills

Typical vegetation: Low sagebrush, other perennial forbs, Sandberg bluegrass, Thurber needlegrass, Indian ricegrass

Ecological site: R026XY025NV—Claypan 8-10 P.Z.

Eastval and similar soils

Composition: 0 to 5 percent

Slope: 2 to 8 percent

Landform: Fan remnants

Typical vegetation: Wyoming big sagebrush, other perennial forbs, desert needlegrass, Indian ricegrass, Thurber needlegrass, ephedra

Ecological site: R026XY016NV—Loamy 8-10 P.Z.

Nevador and similar soils

Composition: 0 to 5 percent

Slope: 2 to 8 percent

Landform: inset fans

Typical vegetation: Indian ricegrass, desert needlegrass, Thurber needlegrass, other perennial forbs, Wyoming big sagebrush, ephedra

Ecological site: R026XY016NV—Loamy 8-10 P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Crops and Pasture" section

"Engineering" and "Soil Properties" sections

920—Aquic Torrifluvents-Torrifluentic Haploxerolls-Conway complex, 0 to 8 percent slopes**Map Unit Setting**

MLRA: 26

Landscape: Mountain valleys or canyons

Elevation: 6,000 to 6,630

Precipitation: 10 to 14 inches

Air temperature: 46 to 48 degrees Fahrenheit

Frost-free period: 80 to 90 days

Composition

Aquic Torrifluvents extremely stony fine sandy loam, 0 to 8 percent slopes—35 percent

Torrifluentic Haploxerolls extremely stony sandy loam, 0 to 8 percent slopes—25 percent

Conway sandy loam, 0 to 2 percent slopes—25 percent

Conway sandy loam, moist, 0 to 2 percent slopes—9 percent

Water—6 percent

Component Description**Aquic Torrifluvents and similar soils**

Landform: Stream terraces

Slope: 0 to 8 percent

Parent material: Alluvium from mixed rock sources

Typical vegetation: Woods' rose, silver buffaloberry, yellow willow, Nevada bluegrass, creeping wildrye

Typical profile:

Surface rock fragments: About 25 percent gravel, 15 percent cobbles, 20 percent stones, 3 percent boulders

Layer 1—0 to 6 inches; extremely stony fine sandy loam

Layer 2—6 to 60 inches; stratified very cobbly fine sandy loam to extremely stony coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 3 inches

Present flooding: Rare

Present ponding: None

Water table: Present

Natural drainage class: Somewhat poorly drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R026XY073NV—Streambank

Component Description**Conway and similar soils**

Landform: Flood plains

Slope: 0 to 2 percent

Parent material: Volcanic ash and alluvium derived from mixed rock sources

Typical vegetation: Sedge, tufted hairgrass, rush, bluegrass, other perennial forbs, other shrubs

Typical profile:

Layer 1—0 to 4 inches; sandy loam

Layer 2—4 to 42 inches; gravelly sandy loam

Layer 3—42 to 60 inches; gravelly coarse sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 6 inches

Present flooding: Occasional

Present ponding: None

Water table: Present

Natural drainage class: Poorly drained

Interpretive Groups

Irrigated land capability: 3w-1

Nonirrigated land capability: 6w-2

Ecological site: R026XY054NV—Wet meadow 14+ P.Z.

Component Description**Torrifluventic Haploxerolls and similar soils**

Landform: Stream terraces

Slope: 0 to 8 percent

Parent material: Aluvium from mixed rock sources

Typical vegetation: Antelope bitterbrush, mountain big sagebrush, other perennial forbs, muttongrass, basin wildrye, needlegrass

Typical profile:

Surface rock fragments: About 35 percent gravel, 25 percent cobbles, 15 percent stones, 3 percent boulders

Layer 1—0 to 5 inches; extremely stony sandy loam

Layer 2—5 to 18 inches; extremely stony coarse sand

Layer 3—18 to 60 inches; stratified very cobbly fine sandy loam to extremely stony coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very low

Saturated hydraulic conductivity class (root zone): High, (Permeability class: Moderately rapid)

Available water capacity: About 3 inches

Present flooding: Rare

Present ponding: None

Natural drainage class: Well drained

Interpretive Groups

Nonirrigated land capability: 7s

Ecological site: R026XY005NV—Loamy 12-14 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions**Conway and similar soils**

Composition: 0 to 9 percent

Slope: 0 to 2 percent

Landform: Flood plains

Typical vegetation: Sedge, creeping wildrye, rush, Nevada bluegrass, other perennial forbs, other shrubs

Ecological site: R026XY055NV—Dry meadow

Water

Composition: 0 to 6 percent

Landform: Streams

Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Crops and Pasture" section

"Engineering" and "Soil Properties" sections

930—Lavaspring complex, 0 to 4 percent slopes**Map Unit Setting**

MLRA: 22A

Landscape: Mountain valleys or canyons

Elevation: 7,000 to 8,500

Precipitation: 16 to 24 inches

Air temperature: 39 to 45 degrees Fahrenheit

Frost-free period: 40 to 70 days

Composition

Lavaspring mucky ashy loam, drained, 0 to 4 percent slopes—60 percent

Lavaspring mucky ashy loam, 0 to 4 percent slopes—25 percent

Lavaspring mucky ashy loam, wet, 0 to 4 percent slopes—6 percent

Trespass gravelly ashy loam, 0 to 4 percent slopes—5 percent

Chrisflat very gravelly coarse sandy loam, 2 to 8 percent slopes—3 percent

Cumulic Cryaquolls very fine sandy loam, 0 to 4 percent slopes—1 percent

Lavaspring mucky ashy loam, wet, 0 to 4 percent slopes—0 percent

Component Description**Lavaspring and similar soils**

Landform: Flood plains

Slope: 0 to 4 percent

Parent material: Alluvium from volcanic and metavolcanic rock with additions of volcanic ash

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Typical profile:

Surface rock fragments: About 10 percent gravel

Layer 1—0 to 7 inches; mucky ashy loam

Layer 2—7 to 31 inches; stratified extremely gravelly loamy coarse sand to clay loam

Layer 3—31 to 60 inches; stratified extremely gravelly coarse sandy loam to gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 9 inches

Present flooding: Occasional

Present ponding: None

Water table: Present

Natural drainage class: Poorly drained

Interpretive Groups

Nonirrigated land capability: 5w

Ecological site: R022AY017NV—Semi-wet meadow

Component Description**Lavaspring and similar soils**

Landform: Flood plains

Slope: 0 to 4 percent

Parent material: Alluvium from volcanic and metavolcanic rock with additions of volcanic ash

Typical vegetation: Creeping bentgrass, sedge, tufted hairgrass, Baltic rush, bluegrass, other perennial grasses, other perennial forbs

Typical profile:

Surface rock fragments: About 10 percent gravel

Layer 1—0 to 7 inches; mucky ashy loam

Layer 2—7 to 31 inches; stratified extremely gravelly loamy coarse sand to clay loam

Layer 3—31 to 60 inches; stratified extremely gravelly coarse sandy loam to gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Very high

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 9 inches

Present flooding: Occasional

Present ponding: None

Water table: Present

Natural drainage class: Poorly drained

Interpretive Groups

Nonirrigated land capability: 5w

Ecological site: R022AY017NV—Semi-wet meadow

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Lavaspring and similar soils

Composition: 0 to 6 percent

Slope: 0 to 4 percent

Landform: Flood plains

Typical vegetation: Nebraska sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses

Ecological site: R022AY016NV—Wet meadow

Trespass and similar soils

Composition: 0 to 5 percent

Slope: 0 to 4 percent

Landform: Stream terraces

Typical vegetation: Mountain silver sagebrush, sedge, mat muhly, bluegrass, other perennial forbs, groundsel

Ecological site: R022AY054NV—Moist mountain basin

Chrisflat and similar soils

Composition: 0 to 3 percent

Slope: 2 to 8 percent

Landform: Fan remnants

Typical vegetation: Western needlegrass, Thurber's needlegrass, basin wildrye, muttongrass, other perennial forbs, mountain big sagebrush, antelope bitterbrush

Ecological site: R022AY022NV—Loamy slope 14-16 P.Z.

Cumulic Cryaquolls and similar soils

Composition: 0 to 1 percent

Classification: Coarse-loamy, mixed, superactive

Cumulic Cryaquolls

Slope: 0 to 4 percent

Landform: Dissected plains

Typical vegetation: Sedge, slender wheatgrass, bluegrass, other perennial forbs, willow

Ecological site: R022AY034NV—Moist willow

Lavaspring and similar soils

Composition: 0 to 0 percent

Slope: 0 to 4 percent

Landform: Flood plains

Typical vegetation: Nebraska sedge, tufted hairgrass, Baltic rush, other perennial forbs, other perennial grasses

Ecological site: R022AY016NV—Wet meadow

Management

For information about managing this map unit, see the following sections and associated tables in this publication:

"Range" section

"Engineering" and "Soil Properties" sections

960—Rose Creek loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 26

Landscape: Valley

Elevation: 4,000 to 6,000

Precipitation: 6 to 10 inches

Air temperature: 48 to 50 degrees Fahrenheit

Frost-free period: 80 to 120 days

Composition

Rose Creek loam, 0 to 2 percent slopes—85 percent

Fallon sand, 0 to 2 percent slopes—8 percent

Dithod loam, 0 to 2 percent slopes—5 percent

Fernley loamy sand, 0 to 2 percent slopes—2 percent

Component Description

Rose Creek and similar soils

Landform: Flood plains

Slope: 0 to 2 percent

Parent material: Alluvium from mixed rock sources

Typical vegetation: Sedge, Nevada bluegrass, rush, meadow barley, other perennial grasses, other perennial forbs, other shrubs

Typical profile:

Layer 1—0 to 18 inches; loam

Layer 2—18 to 60 inches; stratified gravelly sand to silt loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities

Runoff: Low

Saturated hydraulic conductivity class (root zone):

Moderately High, (Permeability class: Moderate)

Available water capacity: About 9 inches

Present flooding: Frequent
 Present ponding: None
 Water table: Present
 Natural drainage class: Poorly drained

Interpretive Groups

Irrigated land capability: 3w
 Nonirrigated land capability: 5w
 Ecological site: R027XY004NV—Wet meadow 8-12 P.Z.

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Fallon and similar soils

Composition: 0 to 8 percent
 Slope: 0 to 2 percent
 Landform: Stream terraces
 Typical vegetation: Beardless wildrye, western needlegrass, beardless wildrye, Nevada bluegrass, inland saltgrass, other perennial grasses, other perennial forbs, willow, other shrubs
 Ecological site: R027XY002NV—Moist floodplain

Dithod and similar soils

Composition: 0 to 5 percent
 Slope: 0 to 2 percent
 Landform: Stream terraces
 Typical vegetation: Beardless wildrye, western needlegrass, beardless wildrye, Nevada bluegrass, inland saltgrass, other perennial grasses, other perennial forbs, willow, other shrubs
 Ecological site: R027XY002NV—Moist floodplain

Fernley and similar soils

Composition: 0 to 2 percent
 Slope: 0 to 2 percent
 Landform: Stream terraces
 Typical vegetation: Sedge, Nevada bluegrass, rush, meadow barley, other perennial grasses, other perennial forbs, other shrubs
 Ecological site: R027XY004NV—Wet meadow 8-12 P.Z.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section
 "Crops and Pasture" section
 "Engineering" and "Soil Properties" sections

998—Dumps-Pits complex

Map Unit Setting

MLRA: 26
 Landscape: None assigned

Composition

Newcone very gravelly sandy loam, 30 to 75 percent slopes—5 percent

Component Description

Dumps

Landform: Mountains

Component Properties and Qualities

Present ponding: None

Interpretive Groups

Nonirrigated land capability: Not determined

Component Description

Pits

Landform: Mountains

Component Properties and Qualities

Present ponding: None

Interpretive Groups

Nonirrigated land capability: Not determined

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Newcone and similar soils

Composition: 0 to 5 percent
 Slope: 30 to 75 percent
 Landform: Backslopes of mountains
 Typical vegetation: Forest canopy—Jeffrey pine Forest understory—other perennial forbs, greenleaf manzanita, antelope bitterbrush, currant, snowberry
 Ecological site: F022AY129NV

Water

Composition: 0 to 5 percent
 Landform: Streams
 Ecological site: None

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
 "Range" section

"Forest land" section
"Engineering" and "Soil Properties" sections

999—Water

Map Unit Setting

MLRA: 22A
Landscape: None assigned

Composition

Water—100 percent

Component Description

Water

Landform: Depressions

Interpretive Groups

Ecological site: None

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Management

For information about managing this map unit, see the following sections and associated tables in this publication:
"Range" section
"Engineering" and "Soil Properties" section

Prime Farmland

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, must encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, seed, forage, fiber, and oilseed crops. Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. An adequate moisture supply and a sufficiently long growing season are required. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources, and farming these soils result in the least damage to the environment

Prime farmland soils may presently be used as cropland, pasture, and woodland or for other purposes. They are used for food and fiber or are available for these uses. Urban or built-up land and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad

yards, airports, sanitary landfills, sewage treatment plants, and water-control structures.

Prime farmland soils commonly receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable, and the level of acidity or alkalinity and the content of salts and sodium are acceptable. The soils have few, if any rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods, and they are not frequently flooded during the growing season or are protected from flooding. Slopes range mainly from 0 to 6 percent.

Soils that have a high water table, are subject to flooding, or are droughty may qualify as prime farmland where these limitations are overcome by drainage measures, flood control, or irrigation. Onsite evaluation is necessary to determine the effectiveness of corrective measures. More information about the criteria for prime farmland can be obtained at the local office of the Natural Resources Conservation Service.

A recent trend in land use has been the conversion of prime farmland to urban and industrial uses. The loss of prime farmland to other uses puts pressure on lands that are less productive than prime farmland.

There are no detailed soil map units that meet the criteria for prime farmland in the Toiyabe National Forest Area, California.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (7,8). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 29, "Classification of the Soils," shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Mollisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Xeroll (*Xer*, meaning *xeric*, plus *oll*, from Mollisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Argixeroll. (*Argi*, meaning *presence of argillic horizon*, plus *xeroll*, the suborder of the Mollisols that have a xeric moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Argixerolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, thickness of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is loamy-skeletal, mixed, frigid, Typic Argixerolls.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series.

Taxonomic Units and Their Morphology

In this section, each taxonomic unit recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each unit. A pedon, a small three-dimensional area of soil that is typical of the unit in the survey area is described. The detailed description of each soil horizon follow standards in the "Soil Survey Manual"(6). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy"(7) and "Keys to Soil Taxonomy" (8). Unless otherwise stated, colors in the descriptions are for dry soil. Following the pedon description is the range of important characteristics of the soils in the unit.

The map units of each taxonomic unit are described in the section "Detailed Soil Map Units".

Alpineco series

The Alpineco series consists of deep, moderately well drained soils that formed in till derived from mixed rocks and colluvium derived mainly from granitic rocks.

Alpineco soils are on mountains. Slopes are 8 to 75 percent. The mean annual precipitation is about 35 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Oxyaquic Dystroxerepts

Typical pedon: Alpineco very stony coarse sandy loam, forestland, in a delineation of map unit 220. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 15 percent gravel, 5 percent stones, and 5 percent boulders.

A1—0 to 3 inches; grayish brown (10YR 5/2) very stony coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine interstitial and tubular pores; 20 percent gravel and 20 percent stones; slightly acid; clear wavy boundary.

A2—3 to 12 inches; brown (10YR 5/3) very stony coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, common fine, and common medium roots; common fine interstitial and tubular pores; 25 percent gravel and 20 percent stones; slightly acid; clear wavy boundary.

Bw1—12 to 22 inches; light yellowish brown (10YR 6/4) very stony coarse sandy loam, dark yellowish brown (10YR 3/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine, common fine, common medium, and common coarse roots; common fine interstitial and tubular pores; 25 percent gravel, 10 percent cobbles, and 20 percent stones; slightly acid; clear wavy boundary.

Bw2—22 to 27 inches; light yellowish brown (10YR 6/4) very stony coarse sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine, common fine, common medium, and common coarse roots; common fine interstitial and tubular pores; 25 percent gravel, 10 percent cobbles, and 20 percent stones; slightly acid; abrupt wavy boundary.

C—27 to 49 inches; light yellowish brown (10YR 6/4) extremely stony coarse sandy loam, dark yellowish

brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; common fine, common medium, and common coarse roots; common very fine and fine interstitial and tubular pores; common medium distinct dark reddish brown (5YR 3/4) moist irregular masses of iron accumulation in the matrix; 45 percent gravel, 10 percent cobbles, and 15 percent stones; slightly acid; abrupt irregular boundary.

R—49 inches; hard granitic rock.

Type location: Alpine County, California; on the Toiyabe National Forest about 1,500 feet south-southeast of Hope Valley Campground; about 2,300 feet north and 1,000 feet west of the southeast corner of section 7, T. 10 N., R. 19 E.; USGS Carson Pass 7.5 minute topographic quadrangle; 38 degrees, 43 minutes, 37.9 seconds north latitude and 119 degrees, 55 minutes, 33.2 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; saturated within 40 inches of the soil surface, in horizons above the bedrock, for greater than 20 consecutive days during the spring or early summer; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 59 to 62 degrees.

Umbric epipedon thickness: 10 to 17 inches.

Depth to bedrock: 40 to 60 inches to a lithic contact.

Particle-size control section:

Clay content—Averages 12 to 18 percent.

Rock fragments—Averages 35 to 60 percent.

Lithology of fragments are granitic rocks such as granodiorite and volcanic rocks such as andesite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Moderately acid or slightly acid.

Bw horizons:

Hue—10YR or 7.5YR.

Value—3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Very stony coarse sandy loam or very stony sandy loam.

Clay content—10 to 18 percent.

Rock fragments—35 to 60 percent.

Reaction—Moderately acid or slightly acid.

C horizon:

Hue—10YR or 7.5YR.

Value—3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Extremely stony coarse sandy loam or very stony sandy loam.

Clay content—12 to 18 percent.

Rock fragments—m50 to 80 percent.

Reaction—Moderately acid or slightly acid.

Redoximorphic features—Redox concentrations occur as masses of iron accumulation.

Angelwhine series

The Angelwhine series consists of very deep, well drained soils that formed in colluvium derived from volcanic rocks. Angelwhine soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 30 inches and the mean annual temperature is about 40 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Pachic Argicryolls

Typical pedon: Angelwhine extremely gravelly coarse sandy loam, rangeland, in a delineation of map unit 570. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 30 percent gravel, 5 percent cobbles, 2 percent stones, and 1 percent boulders.

A1—0 to 2 inches; grayish brown (10YR 5/2) extremely gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 60 percent gravel; slightly acid; clear wavy boundary.

A2—2 to 7 inches; grayish brown (10YR 5/2) very gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common fine and many very fine roots; many very fine tubular and interstitial pores; 50 percent gravel; slightly acid; clear wavy boundary.

A3—7 to 15 inches; brown (10YR 5/3) extremely gravelly coarse sandy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, friable, nonsticky and nonplastic; common very fine, common fine, and common medium roots; common very fine tubular and

interstitial pores; 65 percent gravel; slightly acid; clear wavy boundary.

Bt1—15 to 23 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular and interstitial pores; few faint clay bridges between sand grains; 55 percent gravel; slightly acid; clear wavy boundary.

Bt2—23 to 35 inches; pale brown (10YR 6/3) very gravelly sandy clay loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common very fine, common fine, and few medium roots; common very fine and fine tubular pores; common distinct clay bridges between sand grains and few faint clay films lining pores; 55 percent gravel; slightly acid; clear wavy boundary.

Bt3—35 to 43 inches; pale brown (10YR 6/3) very gravelly coarse sandy loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular and interstitial pores; few distinct clay bridges between sand grains and few distinct clay films lining pores; 55 percent gravel; slightly acid; clear smooth boundary.

Bt4—43 to 60 inches; light yellowish brown (10YR 6/4) extremely gravelly coarse sandy loam, dark grayish brown (10YR 4/2) moist; moderate fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine, common fine, and common medium roots; common very fine and common fine tubular pores; few distinct clay bridges between sand grains and few distinct clay films lining pores; 65 percent gravel and 5 percent cobbles; slightly acid.

Type location: Mono County, California; on the Toiyabe National Forest west of Poison Creek and about 1.6 miles north of Mount Emma; about 350 feet south and 1,150 feet east of the northwest corner of section 8, T.5 N., R.23 E.; USGS Fales Hot Springs 7.5 minute topographic quadrangle; 38 degrees, 18 minutes, 3.6 seconds north latitude and 119 degrees, 28 minutes, 29.0 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 60 to 80 consecutive

days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 42 to 46 degrees.

Mean summer soil temperature: 52 to 59 degrees.

Mollic epipedon thickness: 16 to 24 inches, includes the Bt1 horizon.

Depth to base of argillic horizon: 60 to 80 inches.

Depth to bedrock: 60 to 80 inches.

Sodium fluoride pH: 8.5 to 9.5.

Particle-size control section:

Clay content—Averages 18 to 25 percent.

Rock fragments—Averages 35 to 60 percent, mainly medium and coarse gravel (5 to 75 mm diameter).

Lithology of fragments are volcanic rocks such as andesite, tuff, or tuff-breccia.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Hue—10YR or 7.5YR.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly coarse sandy loam or very gravelly sandy loam.

Clay content—15 to 25 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt2, Bt3, and Bt4 horizons:

Hue—10YR or 7.5YR.

Value—6 or 7 dry, 4 or 5 moist.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly sandy clay loam, very gravelly coarse sandy loam, very gravelly sandy loam, or very gravelly loam.

Clay content—18 to 25 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Aquic Torrifluvents

Aquic Torrifluvents consists of very deep, somewhat poorly drained soils that formed in alluvium derived from mixed sources. Aquic Torrifluvents are on stream terraces. Slopes are 0 to 8 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 48 degrees.

Taxonomic class: Mesic Aquic Torrifluvents

Reference pedon: Aquic Torrifluvents extremely stony fine sandy loam, rangeland, in a delineation of map unit 920. (Colors are for dry soil unless otherwise noted). The surface is covered with 25 percent gravel, 15 percent cobbles, 20 percent stones and 2 percent boulders.

A—0 to 6 inches; grayish brown (10YR 5/2) extremely stony fine sandy loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine, fine, medium and coarse roots; common very fine tubular and interstitial pores; 30 percent gravel, 15 percent cobbles, 20 percent stones; neutral; clear wavy boundary.

C—6 to 28 inches; light brownish gray (10YR 6/2) extremely stony loamy coarse sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; many very fine, fine, medium and coarse roots; many very fine and fine interstitial pores; 35 percent gravel, 20 percent cobbles, 20 percent stones; neutral; clear wavy boundary.

2Ab—28 to 36 inches; grayish brown (10YR 5/2) extremely stony fine sandy loam, very dark grayish brown (10YR 3/2) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine and medium roots; common very fine tubular and interstitial pores; common fine and medium distinct brown (7.5YR 4/4) moist masses of iron accumulation very friable, nonsticky and nonplastic; common very fine, fine and medium roots; common very fine tubular and interstitial pores; common fine and medium distinct dark yellowish brown (7.5YR 4/4) moist masses of iron accumulation lining roots and pores; 30 percent gravel, 20 percent cobbles, 15 percent stones; neutral; clear wavy boundary.

2C—36 to 60 inches; light brownish gray (10YR 6/2) extremely stony coarse sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; common coarse distinct brown (7.5YR 4/4) moist masses of iron accumulation lining roots and pores; 35 percent gravel, 20 percent cobbles; 20 percent stones; neutral.

Type location: Mono County, California; about 2.9 miles south of Devils Gate; USGS Sweetwater Creek 7.5 minute topographic quadrangle; 38

degrees, 22 minutes, 31.0 seconds north latitude and 119 degrees, 11 minutes, 19.8 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section, moist in winter, spring and early summer, dry in late summer and fall; Xeric moisture regime that borders on Aridic.

Mean annual soil temperature: 47 to 50 degrees.

Ochric epipedon thickness: 2 to 6 inches.

Depth to seasonal aquic conditions: 30 to 40 inches.

Control section:

Clay content—3 to 18 percent.

Rock fragments—35 to 80 percent, mainly stones and cobbles. Lithology of fragments are mainly igneous rocks such as andesite and granodiorite.

A horizons:

Hue—7.5YR or 10YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

C horizons:

Hue—10YR or 2.5Y.

Value—6 through 8 dry, 4 or 5 moist.

Chroma—2 or 3, dry or moist.

Texture—Very stony loamy coarse sand to extremely stony fine sandy loam; some pedons have strata of very cobbly fine sandy loam to very stony coarse sand.

Rock fragments—35 to 80 percent.

Organic matter content—0.25 to 0.5 percent.

Reaction—Slightly acid or neutral.

Redoximorphic features—Redox concentrations occur in some pedons as few to many masses of iron accumulation.

Ashflat series

The Ashflat series consists of very deep, well drained soils that formed in eolian volcanic ash and colluvium derived from andesite. Ashflat soils are on mountains. Slopes are 8 to 15 percent. The mean annual precipitation is about 15 inches and the mean annual temperature is about 44 degrees.

Taxonomic class: Ashy-skeletal, glassy Vitrandic Argicryolls

Typical pedon: Ashflat gravelly ashy sandy loam, rangeland, in a delineation of map unit 870. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 30 percent gravel and 5 percent cobbles.

A1—0 to 2 inches; grayish brown (10YR 5/2) gravelly ashy sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium platy structure; soft, very friable, slightly sticky and nonplastic; many very fine roots; many very fine interstitial pores; 25 percent gravel; slightly acid; clear wavy boundary.

A2—2 to 7 inches; brown (10YR 5/3) gravelly ashy sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine, fine and medium roots; many very fine interstitial and common very fine tubular pores; 30 percent gravel; slightly acid; clear wavy boundary.

Bt1—7 to 20 inches; brown (10YR 5/3) very gravelly ashy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; common very fine tubular and interstitial pores; few faint clay bridges between sand grains; 35 percent gravel; neutral; clear wavy boundary.

Bt2—20 to 33 inches; brown (7.5YR 5/2) very gravelly ashy loam, dark brown (7.5YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine tubular and interstitial pores; common faint clay bridges between sand grains; 30 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.

Bt3—33 to 43 inches; brown (7.5YR 5/3) very gravelly ashy loam, dark brown (7.5YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; few very fine roots; common very fine tubular and interstitial pores; common faint clay bridges between sand grains; 40 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.

Bt4—43 to 60 inches; brown (7.5YR 5/4) very gravelly ashy clay loam, dark brown (7.5YR 3/4) moist; weak coarse parting to moderate medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; few very fine roots; common very fine and fine tubular pores; common distinct clay films on faces of peds and lining pores; 50 percent gravel and 2 percent cobbles; neutral.

Type location: Mono County, California; on the Toiyabe National Forest about 2.7 miles southeast of the Masonic Town site; about 900 feet north and 450 feet east of the southwest corner of section 25, T. 6 N., R. 26 E.; USGS Dome Hill 7.5 minute topographic quadrangle; 38 degrees, 20 minutes, 6.3 seconds north latitude and 119 degrees, 04 minutes, 42.6 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive days in the four months following the summer solstice; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 54 to 59 degrees.

Mollic epipedon thickness: 30 to 45 inches; includes the Bt1, Bt2, and Bt3 horizons.

Volcanic glass content: 35 to 60 percent in coarse silt through fine sand fractions.

Particle-size control section:

Clay content—Averages 18 to 25 percent.

Rock fragments—Averages 35 to 50 percent, mainly gravel. Lithology of fragments is andesite.

A horizons:

Chroma—2 or 3 dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt1, Bt2, and Bt3 horizons:

Hue—10YR or 7.5YR.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly ashy loam or very gravelly ashy sandy clay loam.

Clay content—18 to 25 percent.

Rock fragments—35 to 50 percent.

Organic matter content—1 to 3 percent.

Bt4 horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4 dry or moist.

Texture—Very gravelly ashy loam or very gravelly ashy clay loam.

Clay content—25 to 35 percent.

Rock fragments—35 to 60 percent.

Aspetill series

The Aspetill series consists of very deep, well drained

soils that formed in till derived from igneous and metamorphic rocks. Aspetill soils are on moraines. Slopes are 4 to 30 percent. The mean annual precipitation is about 25 inches and the mean annual temperature is about 40 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Pachic Argicryolls

Typical pedon: Aspetill very gravelly sandy loam, forestland, in a delineation of map unit 480. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 10 percent gravel, 2 percent stones, and 2 percent boulders.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) very gravelly sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine and common fine roots; many very fine interstitial pores; 35 percent gravel; neutral; clear smooth boundary.

Bt1—5 to 16 inches; dark grayish brown (10YR 4/2) extremely cobbly coarse sandy loam, very dark brown (10YR 2/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine through very coarse roots; many very fine tubular and interstitial pores; common faint clay bridges between sand grains; 40 percent gravel and 30 percent cobbles; neutral; clear wavy boundary.

Bt2—16 to 20 inches; 50 percent brown (10YR 5/3) and 50 percent grayish brown (10YR 5/2) extremely cobbly sandy clay loam, 50 percent dark brown (10YR 3/3) and 50 percent very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine through coarse roots; common very fine tubular and interstitial pores; common faint clay bridges between sand grains and few distinct clay films on faces of peds; 35 percent gravel and 30 percent cobbles; neutral; clear wavy boundary.

Bt3—20 to 26 inches; 60 percent brown (10YR 5/3) and 40 percent grayish brown (10YR 5/2) extremely cobbly sandy clay loam, 60 percent brown (10YR 4/3) and 40 percent very dark grayish brown (10YR 3/2) moist; weak medium and coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine through coarse roots; common very fine tubular and interstitial pores; common faint clay films on faces of peds and lining pores; 35 percent gravel and 30 percent cobbles; neutral; clear wavy boundary.

Bt4—26 to 42 inches; light yellowish brown (10YR 6/4) very gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine, common very fine and medium roots; common very fine tubular pores; common fine and medium distinct strong brown (7.5YR 4/6) moist, irregular masses of iron accumulation; few faint clay bridges between sand grains; 50 percent gravel; neutral; clear wavy boundary.

Bt5—42 to 60 inches; pale brown (10YR 6/3) extremely gravelly coarse sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; few very fine, common fine and medium roots; few very fine tubular pores; common fine and medium prominent strong brown (7.5YR 4/6) moist, irregular masses of iron accumulation; few faint clay bridges between sand grains; 60 percent gravel; neutral.

Type location: Mono County, California; on the Toiyabe National Forest about 0.4 mile north of the USMC Mountain Warfare School; about 1,950 feet south and 1,300 feet east of the northwest corner of section 13, T. 6 N., R. 22 E.; USGS Pickel Meadow 7.5 minute topographic quadrangle; 38 degrees, 22 minutes, 06 seconds north latitude and 119 degrees, 30 minutes, 53.4 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 60 to 80 consecutive days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 40 to 47 degrees.

Mean summer soil temperature: 47 to 52 degrees.

Mollic epipedon thickness: 24 to 36 inches; includes the Bt1, Bt2, and Bt3 horizons.

Depth to base of argillic horizon: 40 to more than 60 inches.

Particle-size control section:

Clay content—Averages 18 to 25 percent;

Rock fragments—Averages 60 to 80 percent, mainly cobbles. Lithology of fragments are mixed igneous and metamorphic rocks such as granodiorite, andesite, schist, and gneiss.

A horizon:

Value—3 through 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—5 to 8 percent.

Reaction—Slightly acid or neutral.

Bt1, Bt2, and Bt3 horizons:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Extremely cobbly coarse sandy loam, extremely cobbly sandy clay loam, or extremely gravelly sandy clay loam.

Clay content—18 to 25 percent.

Rock fragments—60 to 80 percent.

Organic matter content—1 to 4 percent.

Reaction—Slightly acid or neutral.

Bt4 and Bt5 horizons:

Hue—10YR or 7.5YR.

Value—5 or 6 dry.

Chroma—3 or 4, dry or moist.

Texture—Extremely cobbly coarse sandy loam, extremely cobbly sandy clay loam, very gravelly coarse sandy loam, or extremely gravelly coarse sandy loam.

Clay content—15 to 25 percent.

Rock fragments—60 to 80 percent.

Reaction—Slightly acid or neutral.

Redoximorphic features—Redox concentrations occur as masses of iron accumulation in some pedons.

Aspocket series

The Aspocket series consists of deep, well drained soils that formed in colluvium and residuum derived from tuff, tuff-breccia, and andesite. Aspocket soils are on mountains. Slopes are 4 to 30 percent. The mean annual precipitation is about 25 inches and the mean annual temperature is about 40 degrees.

Taxonomic class: Loamy-skeletal, isotic Pachic Argicryolls

Typical pedon: Aspocket gravelly sandy loam, forestland, in a delineation of map unit 340. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 15 percent gravel and 3 percent stones.

A1—0 to 5 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark brown (10YR 2/2) moist, moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; common very fine and fine tubular and

interstitial pores; 15 percent gravel and 5 percent stones; neutral; clear wavy boundary.

A2—5 to 13 inches; dark grayish brown (10YR 4/2) very gravelly loam, very dark brown (10YR 2/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine through coarse roots; common very fine tubular and interstitial pores; 25 percent gravel and 10 percent stones; neutral; clear wavy boundary.

Bt1—13 to 22 inches; brown (7.5YR 5/2) very stony loam, dark brown (7.5YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and common fine through coarse roots; common very fine tubular and interstitial pores; common faint clay films bridging sand grains; 25 percent gravel and 20 percent stones; slightly acid; clear wavy boundary.

Bt2—22 to 38 inches; brown (7.5YR 5/3) very stony clay loam, dark brown (7.5YR 3/3) moist; strong medium subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; common very fine through coarse roots; common very fine tubular and interstitial pores; common distinct clay films on faces of peds and lining pores; 30 percent gravel and 25 percent stones; slightly acid; clear wavy boundary.

Bt3—38 to 54 inches; brown (7.5YR 5/4) gravelly clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; few very fine and common fine through coarse roots; common very fine tubular and interstitial pores; common distinct clay films on faces of peds and lining pores; 15 percent gravel and 5 percent cobbles; 30 percent paragravel; slightly acid.

Cr—54 to 60 inches: weathered andesitic tuff.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.75 mile north of the Fire Lookout on Leviathan Peak; about 1,100 feet north and 700 feet east of the southwest corner of section 19, T. 10 N., R. 21 E.; USGS Topaz Lake 7.5 minute topographic quadrangle; 38 degrees, 41 minutes, 44.7 seconds north latitude and 119 degrees, 36 minutes, 36.7 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry

from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 47 to 52 degrees.

Mollic epipedon thickness: 30 to 50 inches.

Depth to base of argillic horizon: 40 to 60 inches.

Depth to bedrock: 40 to 60 inches to a paralithic contact.

The paralithic materials below the contact are weathered volcanic rock such as andesitic tuff.

Sodium fluoride pH: 8.5 to 9.5.

Particle-size control section:

Clay content—Averages 18 to 27 percent.

Rock fragments—Averages 35 to 60 percent.

Lithology of fragments are volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—1 or 2, dry or moist.

Organic matter content—5 to 8 percent.

Reaction—Slightly acid or neutral.

Bt1 and Bt2 horizons:

Hue—10YR or 7.5YR.

Chroma—2 or 3, dry or moist.

Texture—Very stony loam or very stony clay loam.

Clay content—18 to 27 percent.

Rock fragments—35 to 60 percent.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt3 horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 4 or 5 moist.

Chroma—4 or 6 dry or moist.

Texture—Gravelly clay loam, very gravelly clay loam, or very gravelly loam.

Clay content—25 to 35 percent.

Rock fragments—15 to 50 percent.

Reaction—Slightly acid or neutral.

Bagval series

The Bagval series consists of very deep, well drained and moderately well drained soils that formed in alluvium derived from altered tuff, tuff-breccia, and andesite. Bagval soils are on fan remnants and low stream terraces. Slopes are 0 to 8 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Fine, smectitic, frigid Typic Haploxererts

Typical pedon: Bagval clay loam, rangeland, in a delineation of map unit 310. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel.

A—0 to 2 inches; brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, very friable, moderately sticky and moderately plastic; few very fine roots; common very fine interstitial pores; 10 percent gravel; neutral; abrupt wavy boundary.

Bt—2 to 9 inches; brown (7.5YR 4/2) clay, dark brown (7.5YR 3/2) moist; moderate medium prismatic structure parting to strong fine angular blocky; many very fine and fine roots; common very fine tubular and interstitial pores; prominent pressure cutans on faces of peds; 1 to 2 cm wide vertical cracks; 5 percent gravel; slightly acid; clear wavy boundary.

Btss—9 to 30 inches; brown (7.5YR 5/2) clay, dark brown (7.5YR 3/2) moist; strong coarse prismatic parting to strong medium and coarse angular blocky structure; very hard, very firm, very sticky and very plastic; common very fine through medium roots; common very fine tubular and interstitial pores; 40 percent intersecting slickensides bounding wedge-shaped peds; 1 to 2 cm wide vertical cracks; 10 percent gravel; neutral; clear wavy boundary.

Btkss1—30 to 45 inches; brown (7.5YR 5/2) clay, dark brown (7.5YR 3/2) moist; strong coarse prismatic structure parting to strong medium and coarse angular blocky; very hard, very firm, very sticky and very plastic; common very fine through medium roots; few very fine tubular and interstitial pores; many (40 percent) intersecting slickensides bounding wedge-shaped peds; 1 to 2 cm wide vertical cracks; 10 percent gravel; secondary carbonates segregated as common fine and medium masses; noneffervescent matrix and strongly effervescent carbonate masses; neutral; clear wavy boundary.

Btkss2—45 to 60 inches; brown (7.5YR 5/3) clay, dark brown (7.5YR 3/3) moist; strong medium prismatic structure parting to strong medium and coarse angular blocky; very hard, firm, very sticky and very plastic; few very fine and fine roots; few very fine tubular and interstitial pores; common intersecting slickensides bounding wedge-shaped peds; 10 percent gravel; secondary carbonates segregated as many fine and medium masses; noneffervescent matrix and strongly effervescent carbonate masses; moderately alkaline.

Type location: Alpine County, California; on the Toiyabe National Forest about 2.2 miles south of Heenan Lake; about 1,900 feet north and 500 feet west of the southeast corner of section 22, T. 9 N., R. 21 E.; USGS Wolf Creek 7.5 minute topographic quadrangle; 38 degrees, 36 minutes, 39.1 seconds north latitude and 119 degrees, 38 minutes, 59.9 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during fall, winter, and spring; usually dry from July through early October; adjacent soils have Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degree.

Mean summer soil temperature: 62 to 65 degrees.

Mollic epipedon thickness: 30 to 60 inches.

Depth to horizons with secondary carbonates: 30 to 40 inches.

Cracks: 1 to 2 cm wide vertical cracks are present in the upper 30 to 45 inches and are open from July to October in most years.

Particle-size control section:

Clay content—45 to 60 percent.

Rock fragments—Averages less than 15 percent, mainly pebbles. Lithology of fragments is volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizon:

Hue—7.5YR or 10YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt horizon:

Hue—7.5YR or 10YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—1 or 2, dry or moist.

Clay content—45 to 60 percent.

Rock fragments—0 to 15 percent.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Btss horizon:

Hue—7.5YR or 10YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—1 or 2, dry or moist.

Clay content—45 to 60 percent.

Rock fragments—0 to 15 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Btkss horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—1 or 2, dry or moist.

Clay content—45 to 60 percent.

Rock fragments—0 to 15 percent.

Organic matter content—1 or 2 percent.

Reaction—Neutral through moderately alkaline.

Identifiable secondary carbonates—Occurs as few to many masses or filaments.

Calcium carbonate equivalent—1 to 5 percent.

Bakscratch series

The Bakscratch series consists of shallow, well drained soils that formed in residuum and colluvium derived from granitic rocks. Bakscratch soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 18 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, shallow Xeric Argicryolls

Typical pedon: Bakscratch very gravelly coarse sandy loam, rangeland, in a delineation of map unit 710. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with about 30 percent gravel, 10 percent cobbles and 10 percent stones.

A1—0 to 3 inches; dark grayish brown (10YR 4/2) very gravelly coarse sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 30 percent gravel, 10 percent cobbles, 3 percent stones; neutral; abrupt smooth boundary.

A2—3 to 7 inches; dark grayish brown (10YR 4/2) very gravelly coarse sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common very fine tubular and many fine interstitial pores; 30 percent gravel, 10 percent cobbles, 3 percent stones; neutral; clear smooth boundary.

Bt1—7 to 11 inches; grayish brown (10YR 5/2) very gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots; common very fine tubular and many very fine interstitial pores; few faint clay films bridging sand grains; 35 percent

gravel, 5 percent cobbles; neutral; clear smooth boundary.

Bt2—11 to 16 inches; yellowish brown (10YR 5/4) very gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine and medium roots; many very fine interstitial and common fine tubular pores; weak faint clay films bridging sand grains; 45 percent gravel, 5 percent cobbles; neutral; clear smooth boundary.

Cr—16 inches; weathered and fractured granitic rock; roots and fine-earth in fractures.

Type location: Mono County, California; on the Toiyabe National Forest on the southwest slope of Middle Sister in the Sweetwater Mountains, in an unsurveyed area; Desert Creek Peak USGS 7.5 minute topographic quadrangle; 38 degrees, 30 minutes, 16.0 seconds north latitude and 119 degrees, 17 minutes, 50.8 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry from July through October; xeric moisture regime that borders on aridic.

Soil temperature: 42 to 45 degrees.

Mean summer soil temperature: 54 to 59 degrees.

Thickness of mollic epipedon: 7 to 14 inches; may include an upper subhorizon of the argillic or the entire argillic horizon in some pedons.

Depth to bedrock: 14 to 20 inches to a paralithic contact. The paralithic materials below the contact are weathered granitic bedrock.

Control section:

Clay content—12 to 18 percent.

Rock fragments—35 to 60 percent, dominantly fine pebbles. Lithology of fragments are granitic rocks such as granite or granodiorite.

Reaction—Slightly acid or neutral.

A horizons:

Value—2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Bt horizon:

Value—5 or 6 dry, 3 or 4 moist.

Chroma—2, 3 or 4 dry or moist.

Clay content—12 to 18 percent.

Consistence—Slightly hard or hard, dry.

Brokenhoe series

The Brokenhoe series consists of moderately deep to a duripan, well drained soils that formed in alluvium derived mainly from volcanic rocks with surficial additions of eolian volcanic ash. Brokenhoe soils are on fan remnants. Slopes are 4 to 30 percent. The mean annual precipitation is about 13 inches and the mean annual temperature is about 45 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Vitritorrandic Durixerolls

Typical pedon: Brokenhoe very cobbly ashy sandy loam, rangeland, in a delineation of map unit 900. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 10 percent cobbles, 3 percent stones, and 1 percent boulders.

A1—0 to 2 inches; grayish brown (10YR 5/2) very cobbly ashy sandy loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy structure; soft, very friable, nonsticky and nonplastic; many very fine and many fine roots; many very fine and fine vesicular pores; 20 percent gravel, 15 percent cobbles, and 5 percent stones; neutral; clear wavy boundary.

A2—2 to 6 inches; grayish brown (10YR 5/2) very cobbly ashy sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, common fine, common medium, and common coarse roots; common very fine tubular and interstitial pores; 20 percent gravel, 20 percent cobbles, and 5 percent stones; neutral; clear wavy boundary.

Bt1—6 to 10 inches; brown (10YR 5/3) very gravelly ashy sandy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, common fine, common medium, and common coarse roots; common very fine tubular and interstitial pores; common faint clay bridges between sand grains; 30 percent gravel, 10 percent cobbles, and 5 percent stones; neutral; clear wavy boundary.

Bt2—10 to 20 inches; yellowish brown (10YR 5/4) very cobbly clay loam, dark yellowish brown (10YR 3/4) moist; strong medium and coarse angular blocky structure; very hard, very firm, moderately sticky and moderately plastic; common very fine, common fine, common medium, and common coarse roots;

common very fine tubular and interstitial pores; many distinct and few prominent clay films on faces of peds and lining pores; 30 percent gravel, 20 percent cobbles, and 5 percent stones; neutral; clear wavy boundary.

Bqm1—20 to 37 inches; 60 percent light yellowish brown (10YR 6/4) and 40 percent light brownish gray (10YR 6/2) cemented material, 60 percent dark yellowish brown (10YR 4/4) and 40 percent dark grayish brown (10YR 4/2) moist; weak very thick platy structure; very hard, extremely firm, continuously moderately cemented by opaline silica; very few very fine roots and clay films lining fractures; gradual wavy boundary.

Bqm2—37 to 60 inches; pale brown (10YR 6/3) extremely stony cemented sandy loam, brown (10YR 4/3) moist; weak coarse subangular blocky structure; very hard, firm, slightly sticky and nonplastic; continuously weakly cemented by opaline silica; very few very fine roots lining fractures; few very fine tubular and interstitial pores; common opal coats on rock fragments; 25 percent gravel, 20 percent cobbles, and 30 percent stones; neutral.

Type location: Mono County, California; on the Toiyabe National Forest about 1 mile east-southeast of the Bridgeport Reservoir Dam; about 1,650 feet north and 200 feet east of the southwest corner of section 36, T.6 N., R. 25 E.; USGS Bridgeport 7.5 minute topographic quadrangle; 38 degrees, 19 minutes, 20.9 seconds north latitude and 119 degrees, 11 minutes, 22.9 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in winter and spring, dry from July through October; Aridic moisture regime that borders on xeric.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 10 to 19 inches; includes the Bt1 horizon.

Depth to duripan: 20 to 40 inches.

Depth to bedrock: More than 80 inches.

Particle-size control section:

Clay content—Averages 27 to 35 percent.

Rock fragments—Averages 50 to 80 percent, mainly cobbles and stones. Lithology of fragments is mainly volcanic rocks such as andesite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Volcanic glass content—30 to 60 percent in coarse silt through fine sand fractions.

Bt1 horizon:

Hue—10YR or 7.5YR.

Texture—Very gravelly ashy sandy clay loam, very cobbly ashy sandy loam, or extremely stony ashy sandy loam.

Clay content—18 to 25 percent.

Rock fragments—50 to 80 percent.

Reaction—Slightly acid or neutral.

Organic matter content—1 to 3 percent.

Volcanic glass content—10 to 35 percent in the coarse silt through fine sand fractions.

Oxalate Al + 1/2 oxalate iron—0.2 to 0.4 percent.

Bt2 horizon:

Hue—10YR or 7.5YR.

Texture—Very cobbly clay loam, very cobbly clay, or extremely stony clay loam.

Clay content—35 to 50 percent.

Rock fragments—50 to 80 percent.

Reaction—Slightly acid or neutral.

Bqm1 horizon:

Cementation—Continuous moderate cementation by silica.

Rupture resistance—Very hard dry, extremely firm moist.

Bqm2 horizon:

Cementation—Continuous weak cementation by silica.

Rupture resistance—Hard or very hard dry, very firm moist.

Texture—Very stony cemented sandy loam, extremely stony cemented sandy loam, or extremely cobbly cemented sandy loam.

Rock fragments—50 to 80 percent, dominantly cobbles and stones.

Buggin series

The Buggin series consists of shallow, somewhat excessively drained soils that formed in colluvium and residuum derived from granitic rock. Buggin soils are on mountains. Slopes are 8 to 75 percent. The mean annual precipitation is about 35 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Sandy-skeletal, mixed, shallow Xeric Haplocryolls

Typical pedon: Buggin extremely bouldery loamy coarse sand, rangeland in a delineation of map unit 420. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 30 percent gravel, 5 percent cobbles, 5 percent stones, and 15 percent boulders.

A1—0 to 2 inches; dark grayish brown (10YR 4/2) extremely bouldery loamy coarse sand, very dark brown (10YR 2/2) moist; weak fine granular structure; common very fine roots; common very fine tubular and interstitial pores; 40 percent gravel, 10 percent stones, and 20 percent boulders; slightly acid; clear wavy boundary.

A2—2 to 7 inches; brown (10YR 5/3) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine and medium granular structure; soft, very friable, nonsticky and nonplastic; common very fine through medium roots; common very fine tubular and interstitial pores; 50 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.

Bw—7 to 10 inches; 70 percent brown (10YR 5/3) and 30 percent light brownish gray (10YR 6/2) extremely gravelly coarse sandy loam, 70 percent dark brown (10YR 3/3) and 30 percent brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine through medium roots; common very fine tubular and interstitial pores; 65 percent gravel; slightly acid; clear wavy boundary.

Cr—10 to 16 inches; weathered granitic rock.

R—16 inches; hard granitic rock.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.6 mile north of Coyote Valley; about 2,150 feet north and 1,000 feet west of the southeast corner of section 5, T. 7 N., R. 22 E.; USGS Lost Cannon Peak 7.5 minute topographic quadrangle; 38 degrees, 28 minutes, 53.1 seconds north latitude and 119 degrees, 34 minutes, 50.0 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 52 to 59 degrees.

Mollic epipedon thickness: 10 to 14 inches.

Depth to bedrock: 10 to 14 inches to a paralithic contact. The paralithic materials below the contact are

weathered granitic rock. Hard, unweathered rock is within 25 inches of the soil surface.

Particle-size control section:

Clay content—Averages 3 to 8 percent.

Rock fragments—Averages 50 to 80 percent, mainly fine (2 to 5 mm diameter) pebbles. Lithology of fragments is granitic rocks such as granodiorite.

A1 horizon:

Value—3 or 4 dry, 2 or 3 moist.

Chroma—1 or 2 moist.

Organic matter content—5 to 8 percent.

Reaction—Moderately acid or slightly acid.

A2 horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—3 to 6 percent.

Texture—Very gravelly loamy coarse sand or extremely gravelly loamy coarse sand.

Reaction—Moderately acid or slightly acid.

Bw horizon:

Chroma—3 or 4, dry or moist.

Texture—Extremely gravelly coarse sandy loam or very gravelly loamy coarse sand.

Clay content—8 to 10 percent.

Rock fragments—50 to 80 percent.

Reaction—Moderately acid or slightly acid.

Bullville series

The Bullville series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from granitic rock. Bullville soils are on mountains. Slopes are 50 to 75 percent. The mean annual precipitation is about 18 inches and the mean annual temperature is about 38 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Xeric Argicryolls

Typical pedon: Bullville very gravelly coarse sandy loam, rangeland in a delineation of map unit 801. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with about 2 percent boulders, 3 percent stones, 10 percent cobbles, and 40 percent gravel.

A1—0 to 4 inches; grayish brown (10YR 5/2) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine

roots; many very fine interstitial pores; 50 percent gravel; neutral; clear smooth boundary.

A2—4 to 10 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, medium and coarse roots; common very fine tubular and interstitial pores; 50 percent gravel; neutral; clear wavy boundary.

Bt1—10 to 15 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; few faint clay films bridging sand grains; 55 percent gravel; neutral; clear wavy boundary.

Bt2—15 to 30 inches; pale brown (10YR 6/3) very gravelly sandy clay loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine and medium roots; common very fine tubular and interstitial pores; common faint clay films bridging sand grains; 55 percent gravel; neutral; clear wavy boundary.

Cr—30 inches; highly weathered and fractured granitic rock; some fine-earth and few roots in fractures.

Type location: Mono County, California; on the Toiyabe National Forest on Masonic Mountain; about 1,900 feet south and 1,800 feet east of the northwest corner of section 28, T. 6 N.; R. 26 E.; USGS Bridgeport 7.5 minute topographic quadrangle; 38 degrees, 20 minutes, 25.5 seconds north latitude and 119 degrees, 07 minutes, 44.3 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section in winter and spring, dry from July through October; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 39 to 45 degrees.

Mean summer soil temperature: 54 to 59 degrees.

Mollic epipedon thickness: 10 to 15 inches, includes the Bt1 horizon.

Depth to bedrock: 20 to 40 inches to a paralithic contact. The paralithic materials below the contact are weathered granitic rock such as granodiorite.

Reaction: Slightly acid or neutral.

Particle-size control section:

Clay content—18 to 25 percent;

Sand content—50 to 65 percent.

Rock fragments—Averages 50 to 80 percent, mostly fine pebbles (2 to 5 mm diameter). Lithology of fragments are granitic rocks such as granodiorite.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 or 3 percent.

Bt1 horizon:

Chroma—2 or 3 dry or moist.

Texture—Very gravelly coarse sandy loam or extremely gravelly sandy clay loam.

Clay content—18 to 25 percent.

Rock fragments—50 to 80 percent.

Consistence—Slightly hard to very hard dry.

Organic matter content—1 to 3 percent.

Bt2 and Bt3 horizons:

Chroma—3 or 4, dry or moist.

Texture—Very gravelly sandy clay loam or extremely gravelly sandy clay loam.

Clay content—20 to 25 percent.

Rock fragments—50 to 80 percent.

Consistence—Slightly hard to very hard dry.

Burchflat series

The Burchflat series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from andesite, tuff, or tuff breccia. Burchflat soils are on mountains. Slopes are 4 to 50 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Pachic Argixerolls

Typical pedon: Burchflat very gravelly sandy loam, rangeland, in a delineation of map unit 730. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 5 percent cobbles, and 2 percent stones.

A1—0 to 3 inches; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine roots; many very fine interstitial pores; 40 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.

A2—3 to 9 inches; grayish brown (10YR 5/2) extremely gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; many very fine interstitial and common very fine tubular pores; 50 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.

Bt1—9 to 21 inches; brown (10YR 5/3) extremely gravelly loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine, fine, medium and coarse roots; common very fine tubular and interstitial pores; common faint clay films on faces of peds and lining pores; 55 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.

2Bt2—21 to 36 inches; pale brown (10YR 6/3) extremely cobbly loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; few very fine and fine roots; common very fine tubular and interstitial pores; common faint clay films on faces of peds and lining pores; 50 percent gravel, 20 percent cobbles, and 15 percent stones; neutral; clear irregular boundary.

2R—36 inches; Hard andesitic tuff-breccia.

Type location: Mono County, California; on the Toiyabe National Forest west of the Sweetwater Mountains and about 1.75 miles northeast of Burcham Flat; about 1,000 feet north and 500 feet west of the southeast corner of section 35, T. 7 N., R. 23 E.; USGS Chris Flat 7.5 minute topographic quadrangle; 38 degrees, 24 minutes, 17.0 seconds north latitude and 119 degrees, 24 minutes, 50.1 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive days in the four months following the summer solstice; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 20 to 30 inches; includes the Bt1 horizon.

Depth to base of argillic horizon: 20 to 40 inches.

Depth to bedrock: 20 to 40 inches to a lithic contact.

Particle-size control section:

Clay content—Averages 18 to 27 percent.

Rock fragments—Averages 60 to 80 percent, mainly gravel and cobbles. Lithology of fragments are volcanic rocks such as andesite, tuff, or tuff-breccia.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.
 Chroma—2 or 3, dry or moist.
 Organic matter content—3 to 5 percent.
 Reaction—Slightly acid or neutral.

Bt1 horizon:

Chroma—2 or 3 dry or moist.
 Texture—Extremely gravelly loam or extremely gravelly sandy clay loam.
 Clay content—18 to 27 percent.
 Rock fragments—60 to 80 percent.
 Organic matter content—1 to 3 percent
 Reaction—Slightly acid or neutral.

2Bt2 horizon:

Hue—10YR or 7.5YR.
 Value—5 or 6 dry, 3 or 4 moist.
 Chroma—3 or 4, dry or moist.
 Texture—Extremely gravelly loam, extremely cobbly loam, or extremely gravelly sandy clay loam.
 Clay content—18 to 27 percent.
 Rock fragments—60 to 80 percent.
 Reaction—Slightly acid or neutral.

Burnlake series

The Burnlake series consists of very deep, well drained soils that formed in till derived from mixed rocks. Burnlake soils are on moraines. Slopes are 8 to 30 percent. The mean annual precipitation is about 35 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Humic Dystrochrepts

Typical pedon: Burnlake extremely gravelly sandy loam, forestland, in a delineation of map unit 170. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 45 percent gravel, 5 percent cobbles, 5 percent stones, and 5 percent boulders.

A1—0 to 2 inches; dark grayish brown (10YR 4/2) extremely gravelly sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic;

common very fine and common fine roots; common very fine interstitial and tubular pores; 50 percent gravel, 5 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

A2—2 to 17 inches; brown (10YR 5/3) extremely gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; common very fine interstitial and tubular pores; 55 percent gravel, 10 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

Bw—17 to 26 inches; pale brown (10YR 6/3) extremely gravelly coarse sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, common fine, common medium, and common coarse roots; common very fine interstitial and tubular pores; 65 percent gravel and 10 percent cobbles; slightly acid; clear wavy boundary.

C—26 to 60 inches; pale brown (10YR 6/3) extremely gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, common fine, and common medium roots; common very fine interstitial and common fine tubular pores; 70 percent gravel and 10 percent cobbles; slightly acid.

Type location: Alpine County, California; on the Toiyabe National Forest about 1 mile southwest of Pickett Peak; about 4,100 feet north and 2,275 feet west of the southeast corner of section 5, T. 10 N., R. 19 E.; USGS Carson Pass 7.5 minute topographic quadrangle; 38 degrees, 44 minutes, 46.1 seconds north latitude and 119 degrees, 54 minutes, 46.7 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 59 to 62 degrees.

Umbric epipedon thickness: 10 to 20 inches.

Depth to base of cambic horizon: 24 to 40 inches.

Particle-size control section:

Clay content—Averages 8 to 15 percent.

Rock fragments—Averages 60 to 80 percent, mainly gravel. Lithology of fragments is granitic rocks such as granodiorite, volcanic rocks such as andesite, and minor metamorphic rocks such as quartzite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.
 Chroma—2 or 3, dry or moist.
 Organic matter content—2 to 4 percent.
 Reaction—Slightly acid or neutral.

Bw horizon:

Value—5 or 6 dry.
 Chroma—3 or 4, dry or moist.
 Texture—Extremely gravelly coarse sandy loam or very gravelly sandy loam.
 Clay content—8 to 15 percent.
 Rock fragments—50 to 80 percent.
 Reaction—Slightly acid or neutral.

C horizon:

Value—6 or 7 dry.
 Chroma—2 or 3, dry or moist.
 Texture—Extremely gravelly loamy sand or very gravelly loamy coarse sand.
 Clay content—3 to 10 percent.
 Rock fragments—50 to 80 percent.
 Reaction—Slightly acid or neutral.

Cagle series

The Cagle series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from andesitic rocks. Cagle soils are on mountains. Slopes are 15 to 30 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 48 degrees.

Taxonomic class: Fine, smectitic, mesic Aridic Argixerolls

Typical pedon: Cagle very stony loam, woodland, in adjacent Douglas County. (Colors are for dry soil unless otherwise noted.)

- A1—0 to 1 inch: grayish brown (10YR 5/2) very stony loam, very dark grayish brown (10YR 3/2) moist; weak thick platy structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine, and few fine and medium tubular pores; 30 percent pebbles, 20 percent stones; slightly alkaline; abrupt smooth boundary.
- A2—1 to 4 inches; grayish brown (10YR 5/2) very cobbly loam, very dark grayish brown (10YR 3/2) moist; weak medium platy structure; slightly hard, very friable, nonsticky and slightly plastic; common very fine and few fine roots; many very fine and few fine

tubular pores; 35 percent cobbles; slightly alkaline; abrupt smooth boundary.

- Bt1—4 to 12 inches; dark grayish brown (10YR 4/2) gravelly clay loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, sticky and plastic; few very fine, common medium and few coarse roots; common very fine and few fine tubular pores; continuous faint clay films coating ped faces and lining pores; 20 percent pebbles; 10 percent cobbles; slightly alkaline; abrupt smooth boundary.
- Bt2—12 to 24 inches; brown (10YR 5/3) gravelly clay, brown (10YR 4/3) moist; strong medium and coarse prismatic structure; hard, firm, very sticky and very plastic; few very fine, fine and medium roots; few very fine tubular pores; continuous prominent clay films on faces of peds and lining pores; 20 percent pebbles; slightly alkaline; clear smooth boundary.
- Bt3—24 to 28 inches; grayish brown (2.5Y 5/2) gravelly clay, olive brown (2.5Y 4/4) moist; strong medium and coarse prismatic structure; hard, firm, very sticky and very plastic; few very fine and fine roots; common very fine tubular pores; continuous distinct clay films on faces of peds and lining pores; 15 percent pebbles; slightly alkaline; abrupt smooth boundary.
- Cr—28 inches; weathered andesite with clay films coating fracture planes.

Type location: Douglas County, Nevada, about 1.5 miles southeast of Bodie Flat; about 2,000 feet east and 2,000 feet north of the southwest corner of section 4, T. 11 N., R. 21 E.; USGS Carters Station topographic quadrangle; 38 degrees, 50 minutes, 38 seconds north latitude and 119 degrees, 37 minutes, 59 seconds north latitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry mid June through October. Aridic bordering on Xeric moisture regime.

Soil temperature: 47 to 53 degrees.

Mollic epipedon thickness: 7 to 18 inches.

Depth to paralithic contact: 20 to 40 inches.

Particle-size control section:

Clay content—35 to 50 percent.

Rock fragments—15 to 35 percent, mainly pebbles.

A horizons:

Value—4 or 5 dry, 2, 3 or 4 moist.
 Chroma—1 through 3, dry or moist.
 Reaction—Slightly acid, neutral or slightly alkaline.

Bt horizons:

Hue—10YR or 7.5YR in upper part, 10 YR or 2.5Y in lower part.

Value—In upper part 4 or 5 dry, 3 or 4 moist; in the lower part 5 through 7 dry, 2 through 5 moist.

Chroma—2 through 4, dry or moist.

Texture—Gravelly clay loam, or gravelly clay.

Rock fragments—20 to 35 percent, mainly pebbles; in some pedons the lower part has 20 to 70 percent pebbles, 5 to 20 percent cobbles, and 1 to 10 percent stones.

friable, moderately sticky and slightly plastic; few very fine and common fine, medium, coarse and very coarse roots; common very fine tubular and interstitial pores; common faint clay bridges between sand grains; 30 percent gravel, 10 percent channers, and 10 percent parachanners; neutral; abrupt irregular boundary.

R—17 inches; hard fractured gneiss.

Type location: Mono County, California; on the Toiyabe National Forest about 2 miles southwest of the town of Walker; about 1,000 feet north and 350 feet east of the southwest corner of section 5, T. 7 N., R. 23 E.; USGS Chris Flat 7.5 minute topographic quadrangle; 38 degrees, 28 minutes, 42.9 seconds north latitude and 119 degrees, 28 minutes, 58.3 seconds west longitude, NAD27.

Canfire series

The Canfire series consists of shallow, well drained soils that formed in residuum and colluvium derived from metamorphic rocks. Canfire soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 18 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Lithic Argixerolls

Typical pedon: Canfire very gravelly sandy loam, forestland, in a delineation of map unit 520. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 25 percent channers, 10 percent cobbles, 10 percent flagstones, 3 percent stones, and 1 percent boulders.

A—0 to 2 inches; grayish brown (2.5Y 5/2) very gravelly sandy loam, very dark grayish brown (2.5Y 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; common very fine roots; many very fine interstitial and common very fine tubular pores; 20 percent gravel, 10 percent channers, and 10 percent cobbles; slightly acid; clear wavy boundary.

Bt1—2 to 7 inches; grayish brown (2.5Y 5/2) very gravelly loam, very dark grayish brown (2.5Y 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, moderately sticky and slightly plastic; common very fine, fine, medium and coarse roots; common very fine tubular and interstitial pores; common faint clay bridges between sand grains; 30 percent gravel, 5 percent channers, and 10 percent parachanners; neutral; clear wavy boundary.

Bt2—7 to 17 inches; light yellowish brown (2.5Y 6/3) very gravelly loam, olive brown (2.5Y 4/3) moist; moderate fine subangular blocky structure; soft, very

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during fall, winter, and spring; dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 47 to 50 degrees.

Mollic epipedon thickness: 7 to 10 inches; includes the Bt1 horizon.

Depth to bedrock: 14 to 20 inches to a lithic contact.

Particle-size control section:

Clay content—Averages 18 to 25 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel. Lithology of rock fragments are metamorphic rocks such as schist or gneiss.

A horizon:

Hue—2.5Y or 10YR.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Hue—2.5Y or 10YR.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly loam or very gravelly sandy clay loam.

Clay content—18 to 25 percent.

Rock fragments—35 to 60 percent.

Pararock fragments—5 to 15 percent paragravel or parachanners.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Carshal series

The Carshal series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium from andesite, tuff, and tuff-breccia. Carshal soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, nonacid, frigid, shallow Typic Xerorthents

Typical pedon: Carshal very gravelly sandy loam, rangeland, in a delineation of map unit 400. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 50 percent gravel, 5 percent cobbles, and 2 percent stones.

A—0 to 2 inches; dark grayish brown (10YR 4/2) very gravelly sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine interstitial pores; 50 percent gravel; neutral; clear smooth boundary.

C—2 to 5 inches; dark grayish brown (10YR 4/2) gravelly loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots and few fine and medium; common very fine interstitial and tubular pores; 30 percent gravel and 25 percent paragravel; neutral; clear wavy boundary.

Cr—5 to 14 inches; weathered and fractured andesitic tuff; few roots in fractures.

R—14 inches; hard, unweathered andesitic tuff.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.5 mile south of Centerville Flat; about 2,100 feet north and 500 feet west of the southeast corner of section 13, T. 9 N., R. 20 E.; USGS Wolf Creek 7.5 minute topographic quadrangle; 38 degrees, 37 minutes, 15.8 seconds north latitude and 119 degrees, 43 minutes, 00.1 second west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 59 to 62 degrees.

Ochric epipedon thickness: 1 to 3 inches.

Depth to bedrock: 4 to 14 inches to a paralithic contact. The paralithic materials below the contact are weathered andesitic rock. Hard, unweathered rock is within 25 inches of the soil surface.

Sodium fluoride pH: 8.5 to 9.0.

Particle-size control section:

Clay content—Averages 18 to 25 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel. Lithology of fragments are; volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizon:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

C horizon:

Hue—10YR or 7.5YR.

Value—4 through 6 dry, 3 through 5 moist. Color value of 4 or 5 dry or 3 moist are influenced by the dark color of the parent rock.

Chroma—2 through 4, dry or moist.

Texture—Very gravelly sandy loam, very gravelly sandy clay loam, gravelly sandy loam, or gravelly loam.

Clay content—18 to 27 percent.

Rock fragments—30 to 50 percent.

Pararock fragments—15 to 30 percent.

Organic matter content—0.5 to 1 percent.

Reaction—Slightly acid or neutral.

Cassiro series

The Cassiro series consists of deep and very deep, well drained soils that formed in alluvium from mixed rock sources. The Cassiro soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 47 degrees.

Taxonomic class: Clayey-skeletal, smectitic, mesic Aridic Argixerolls

Typical pedon: Cassiro extremely stony loam, rangeland, in adjacent Douglas County. (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches; grayish brown (10YR 5/2) extremely stony loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky

structure; soft, very friable, nonsticky and nonplastic; many very fine interstitial pores; many very fine roots; many very fine tubular pores; 20 percent gravel, 45 percent stones; slightly acid; abrupt wavy boundary.

A2—2 to 5 inches; grayish brown (10YR 5/2) very cobbly sandy loam, very dark grayish brown (10YR 3/2) moist; strong very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine tubular pores; 25 percent gravel, 25 percent cobbles; neutral; clear wavy boundary.

Bt1—5 to 11 inches; grayish brown (10YR 5/2) extremely gravelly clay loam, very dark grayish brown (10YR 3/2) moist; strong very fine angular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine, fine and medium roots; many very fine tubular pores; common faint clay films coating ped faces and lining pores; 45 percent gravel, 15 percent cobbles; neutral; abrupt wavy boundary.

Bt2—11 to 26 inches; brown (10YR 4/3) very gravelly clay, dark brown (10YR 3/3) moist; strong fine and very fine angular blocky structure; very hard, firm, very sticky and very plastic; common very fine and fine roots; few very fine tubular pores; many distinct clay films coating ped faces and lining pores; 50 percent gravel, 10 percent cobbles; neutral; clear wavy boundary.

Bt3—26 to 35 inches; yellowish brown (10YR 5/4) very gravelly clay, dark yellowish brown (10YR 4/4) moist; strong fine and very fine angular blocky structure; hard, firm, very sticky and very plastic; few very fine roots; few very fine tubular pores; many distinct clay films coating ped faces and lining pores; 50 percent pebbles, 5 percent cobbles; neutral; abrupt wavy boundary.

Bt4—35 to 41 inches; light gray (10YR 7/1) gravelly sandy clay loam, grayish brown (10YR 5/2) moist; massive; slightly hard, friable, sticky and plastic; few very fine roots; few very fine tubular pores; common faint clay films lining pores; 10 percent gravel, 5 percent cobbles; neutral; abrupt wavy boundary.

C—41 to 60 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; 10 percent gravel, 5 percent cobbles; slightly alkaline.

Type location: Douglas County, Nevada; about 1 mile south of Bodie Flat; about 1,320 feet north and 1,600 feet west of the southeast corner of section 6, T. 11 N., R. 21 E.; USGS Carters Station 7.5 minute topographic quadrangle; 38 degrees, 50 minutes, 32

seconds north latitude and 119 degrees, 39 minutes, 58 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Moist late fall through spring, dry summer through mid fall, Aridic moisture regime, bordering on Xeric.

Soil temperature: 47 to 52 degrees.

Mollic epipedon thickness: 10 to 16 inches.

Depth to stratified tuff, silts and ash: 40 to more than 60 inches.

Control section:

Clay content—35 to 50 percent.

Rock fragments—40 to 60 percent, mostly pebbles, including up to 15 percent cobbles and stones.

A horizon:

Hue—7.5YR or 10YR.

Value—3 through 5 dry, 2 or 3 moist.

Chroma—2 or 3.

Structure—Massive, subangular blocky or platy.

Reaction—Medium acid through slightly alkaline.

Bt horizon:

Hue—7.5YR or 10YR.

Value—4 or 5 dry, 3 or 4 moist.

Chroma—2 through 4.

Texture—Sandy clay, clay or clay loam.

Reaction—Medium acid through slightly alkaline.

Other features—Some pedons lack a paralithic contact within a depth of 60 inches.

Cavebear series

The Cavebear series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rocks. Cavebear soils are on stream terraces. Slopes are 2 to 8 percent. The mean annual precipitation is about 35 inches and the mean annual temperature is about 38 degrees.

Taxonomic class: Sandy-skeletal, mixed Aquic Haplocryolls

Typical pedon: Cavebear gravelly loam, rangeland, in a delineation of map unit 200. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 15 percent gravel.

A1—0 to 4 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak very fine granular structure; soft, very friable,

slightly sticky and nonplastic; many very fine roots; common very fine interstitial and tubular pores; 25 percent gravel; moderately acid; clear wavy boundary.

A2—4 to 13 inches; brown (10YR 5/3) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak very fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine roots and common fine; common very fine interstitial and tubular pores; 25 percent gravel; slightly acid; clear wavy boundary.

A3—13 to 20 inches; brown (10YR 5/3) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; common very fine interstitial and tubular pores; 40 percent gravel; slightly acid; clear wavy boundary.

C1—20 to 25 inches; pale brown (10YR 6/3) extremely gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; 65 percent gravel; slightly acid; clear wavy boundary.

C2—25 to 60 inches; light brownish gray (10YR 6/2) extremely gravelly coarse sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; common coarse distinct brown (7.5YR 4/4) moist irregular masses of iron accumulation in the matrix; 70 percent gravel; slightly acid.

Type location: Alpine County, California; on the Toiyabe National Forest in Hope Valley about 1,800 feet east of Highway 88; about 5,015 feet south and 1,950 feet east of the northwest corner of section 6, T. 10 N., R. 19 E.; USGS Freel Peak 7.5 minute topographic quadrangle; 38 degrees, 45 minutes, 6.9 seconds north latitude and 119 degrees, 56 minutes, 6.9 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 47 to 54 degrees.

Mollic epipedon thickness: 16 to 24 inches.

Depth to sandy-skeletal material: 20 to 30 inches.

Depth to seasonal aquic conditions: 20 to 30 inches.

Control section:

Clay content—Averages less than 10 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel. Lithology of fragments are; granitic rocks such as granodiorite, volcanic rocks such as tuff, or minor metamorphic rocks such as quartzite.

A1 horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—3 to 5 percent.

Reaction—Moderately acid or slightly acid.

A2 horizon and A3 horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Gravelly sandy loam or very gravelly sandy loam.

Rock fragments—20 to 45 percent.

Organic matter content—3 to 5 percent.

Reaction—Moderately acid or slightly acid.

C horizons:

Value—4 or 5 moist.

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly coarse sand or extremely gravelly loamy coarse sand.

Clay content—3 to 10 percent.

Rock fragments—60 to 80 percent.

Reaction—Moderately acid or slightly acid.

Redoximorphic features—Redox concentrations occur as masses of iron accumulation.

Celeridge series

The Celeridge series consists of shallow, well drained soils that formed in colluvium and residuum derived from tuff, tuff-breccia, and andesite. Celeridge soils are on mountains. Slopes are 4 to 75 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Lithic Argixerolls

Typical pedon: Celeridge extremely bouldery sandy loam, rangeland, in a delineation of map unit 350. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 15 percent gravel, 10 percent cobbles, 10 percent stones, and 20 percent boulders, and up to 2 inches of leaf litter.

A1—0 to 3 inches; dark grayish brown (10YR 4/2) extremely bouldery sandy loam, very dark brown (10YR 2/2) moist; weak fine and medium subangular

blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine interstitial and few fine tubular pores; 35 percent gravel, 10 percent stones, and 15 percent boulders; slightly acid; clear wavy boundary.

A2—3 to 8 inches; dark grayish brown (10YR 4/2) extremely gravelly sandy loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine and common medium roots; common very fine tubular and interstitial pores; 45 percent gravel and 15 percent cobbles; slightly acid; clear wavy boundary.

Bt1—8 to 13 inches; grayish brown (10YR 5/2) extremely gravelly sandy clay loam, very dark grayish brown (10YR 3/2) moist; strong fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine through medium roots; common very fine tubular and interstitial pores; many distinct clay films on faces of peds and lining pores; 50 percent gravel and 15 percent cobbles; slightly acid; clear wavy boundary.

Bt2—13 to 19 inches; brown (10YR 5/3) extremely gravelly loam, dark brown (10YR 3/3) moist; strong fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine and fine and few medium roots; common very fine tubular and interstitial pores; many distinct clay films on faces of peds and lining pores; 60 percent gravel and 15 percent cobbles; slightly acid; abrupt irregular boundary.

R—19 inches; hard fractured andesite.

Type location: Alpine County, California; on the Toiyabe National Forest about 2 miles north of Leviathan Peak; about 1,450 feet north and 2,400 feet west of the southeast corner of section 18, T.10 N., R. 21 E.; USGS Topaz Lake 7.5 minute topographic quadrangle; 38 degrees, 42 minutes, 40.3 seconds north latitude and 119 degrees, 36 minutes, 14.3 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 59 to 62 degrees.

Mollic epipedon thickness: 14 to 20 inches, includes the Bt horizons.

Depth to bedrock: 14 to 20 inches to lithic contact.

Sodium fluoride pH: 8.5 to 9.0.

Particle-size control section:

Clay content—Averages 18 to 27 percent.

Rock fragments—Averages 60 to 80 percent, mainly pebbles. Lithology of fragments are; volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizons:

Chroma—1 or 2 moist.

Organic matter content—5 to 8 percent.

Reaction—Slightly acid or neutral.

Bt horizons:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly sandy loam, extremely gravelly sandy clay loam, or extremely gravelly loam.

Clay content—18 to 27 percent.

Rock fragments—60 to 80 percent.

Organic matter content—3 to 5 percent.

Reaction—Slightly acid or neutral.

Chen series

The Chen series consists of shallow, well drained soils that formed in residuum and colluvium weathered from volcanic rocks, chert and other sedimentary rocks with a component of loess high in volcanic ash. Chen soils are on hill or mountain crests and side slopes. Slopes are 4 to 15 percent. The mean annual precipitation is about 13 inches and the mean annual temperature is about 44 degrees.

Taxonomic class: Clayey-skeletal, smectitic, frigid Lithic Argixerolls

Typical pedon: Chen very cobbly loam, rangeland, in adjacent Douglas County. (Colors are for dry soils unless otherwise noted).

A1—0 to 2 inches; grayish brown (10YR 5/2) very cobbly loam, very dark grayish brown (10YR 3/2) moist; strong coarse subangular blocky structure; slightly hard, very friable, nonsticky and slightly plastic; many very fine roots; many very fine tubular pores; 40 percent pebbles, 25 percent cobbles; slightly acid; clear wavy boundary.

A2—2 to 5 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2)

moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine tubular pores; 50 percent pebbles; neutral; clear wavy boundary.

Bt1—5 to 9 inches; brown (10YR 5/3) extremely gravelly clay, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; many very fine roots; many very fine tubular pores; many distinct clay films on faces of peds; 60 percent pebbles; neutral; abrupt wavy boundary.

Bt2—9 to 14 inches; brown (10 YR 5/3) extremely gravelly clay, very dark grayish brown (10YR 3/2) moist; moderate fine angular blocky structure; hard, friable, very sticky and very plastic; common very fine and few fine roots; common very fine tubular pores; many prominent clay films on faces of peds; 75 percent pebbles; neutral; abrupt irregular boundary.

R—14 inches; hard andesite.

Type location: Douglas County Nevada; about 2 miles southwest of Holbrook Junction; approximately 100 feet east and 100 feet north of the southwest corner of section 13, T. 10 N., R. 21 E.; 38 degrees, 43 minutes, 22 seconds north latitude and 119 degrees, 35 minutes, 16 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry summer and fall; aridic moisture regime that borders on xeric.

Soil temperature: 43 to 47 degrees.

Mollic epipedon thickness: 7 to 17 inches, includes the Bt1 horizon or both the Bt1 and Bt2 horizons.

Depth to base of argillic horizon: 10 to 20 inches.

Depth to bedrock: 10 to 20 inches to a lithic contact.

Reaction: Slightly acid to slightly alkaline.

Control section:

Clay content—Averages 40 to 55 percent.

Rock fragments—Averages 35 to 60 percent, mainly pebbles and cobbles. Lithology of fragments varies by area.

Other features—An abrupt horizon boundary is normally present at the base of the A (or A2) horizon and the Bt (or Bt1) horizon accompanied by an abrupt increase in clay content of at least 20 percent.

A horizons:

Value—4 through 6 dry, 2 or 3 moist. A dry value of 6 is only in thin A1 horizons in some pedons and the upper 7 inches when mixed has a dry value of 5.

Chroma—2 or 3, dry or moist.

Clay content—10 to 27 percent.

Organic matter content—2 or 3 percent.

Bt horizons:

Hue—7.5YR or 10YR, some pedons have hue of 5YR in areas of red parent materials.

Value—4 or 5 dry, 3 or 4 moist.

Chroma—2 through 4, dry or moist.

Texture—Very gravelly clay, extremely gravelly clay, very cobbly clay, or extremely cobbly clay.

Clay content—40 to 55 percent.

Rock fragments—40 to 65 percent, normally increasing with depth.

Structure—Weak to strong, fine or medium angular or subangular blocky or platy.

Organic matter content—0.5 to 2 percent.

Chenhigh series

The Chenhigh series consists of shallow, well drained soils that formed in residuum derived from tuff, tuff-breccia, and andesite. Chenhigh soils are on mountains. Slopes are 4 to 30 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Clayey-skeletal, mixed, superactive, frigid Lithic Argixerolls

Typical pedon: Chenhigh very gravelly sandy loam, rangeland, in a delineation of map unit 390. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 30 percent gravel, 5 percent cobbles, and 5 percent stones.

A—0 to 3 inches; dark grayish brown (10YR 4/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular and interstitial pores; 45 percent gravel, 5 percent cobbles and 5 percent stones; slightly acid; abrupt wavy boundary.

Bt1—3 to 6 inches; dark grayish brown (10YR 4/2) very gravelly clay loam, very dark grayish brown (10YR 3/2) moist; strong fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine and fine tubular and interstitial pores; many distinct clay films on faces of peds and lining pores; 45 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.

Bt2—6 to 10 inches; brown (10YR 4/3) very gravelly clay, dark brown (10YR 3/3) moist; strong fine and medium angular blocky structure; very hard, firm, very sticky and very plastic; common very fine through medium roots; common very fine tubular and interstitial pores; many distinct clay films on faces of peds and lining pores; 45 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.

Bt3—10 to 18 inches; brown (7.5YR 5/3) extremely gravelly clay, brown (7.5YR 4/3) moist; strong fine and medium angular blocky structure; common very fine through medium roots; common very fine tubular and interstitial pores; many prominent clay films on faces of peds and lining pores; 70 percent gravel and 5 percent cobbles; neutral; clear irregular boundary.

R—18 inches; hard, fractured andesitic tuff.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.6 mile north of Heenan Lake; about 300 feet north and 900 feet east of the southwest corner of section 34, T. 10 N., R. 21 E.; USGS Heenan Lake 7.5 minute topographic quadrangle; 38 degrees, 39 minutes, 49.0 seconds north latitude and 119 degrees, 39 minutes, 53.8 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 7 to 14 inches; includes the Bt1 and Bt2 horizons.

Depth to bedrock: 14 to 20 inches to a lithic contact.

Particle-size control section:

Clay content—Averages 35 to 50 percent.

Rock fragments—Averages 50 to 80 percent, mainly pebbles. Lithology of fragments are; volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizon:

Value—4 or 5 dry.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Hue—10YR or 7.5YR.

Value—4 or 5 dry.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly clay loam or very gravelly clay.

Clay content—30 to 45 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt2 horizon:

Hue—10YR or 7.5YR.

Value—4 or 5 dry.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly clay loam, very gravelly clay, or extremely gravelly clay.

Clay content—35 to 50 percent.

Rock fragments—50 to 80 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt3 horizon:

Hue—10YR or 7.5YR.

Value—4 through 6 dry, 4 or 5 moist.

Chroma—3 or 4, dry or moist.

Texture—Very gravelly clay loam, very gravelly clay, or extremely gravelly clay.

Clay content—35 to 50 percent.

Rock fragments—50 to 80 percent.

Reaction—Slightly acid or neutral.

Chrisflat series

The Chrisflat series consists of very deep, well drained soils that formed in alluvium derived from igneous and metamorphic rocks. Chrisflat soils are on fan remnants. Slopes are 4 to 15 percent. The mean annual precipitation is about 18 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Pachic Argixerolls

Typical pedon: Chrisflat very gravelly coarse sandy loam, rangeland, in a delineation of map unit 500. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 2 percent stones, and 2 percent boulders.

A1—0 to 2 inches; grayish brown (10YR 5/2) very gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial and common very fine tubular pores; 40 percent gravel; slightly acid; clear smooth boundary.

A2—2 to 7 inches; dark grayish brown (10YR 4/2) very gravelly coarse sandy loam, very dark grayish brown

(10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and common fine roots; common very fine tubular and interstitial pores; 45 percent gravel; slightly acid; clear wavy boundary.

Bt1—7 to 14 inches; brown (10YR 4/3) very gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, common fine, and common medium roots; common very fine tubular and interstitial pores; few faint clay bridges on sand grains; 35 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.

Bt2—14 to 22 inches; brown (10YR 5/3) very gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, common fine, and common medium roots; common very fine tubular and interstitial pores; common faint clay bridges on sand grains; 35 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.

Bt3—22 to 26 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and few fine roots; common very fine tubular and interstitial pores; common faint clay bridges on sand grains; 35 percent gravel, 10 percent cobbles, and 5 percent stones; neutral; clear wavy boundary.

Bt4—26 to 60 inches; yellowish brown (10YR 5/4) extremely stony sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; very hard, friable, moderately sticky and moderately plastic; few very fine and few fine roots; common very fine tubular and interstitial pores; common distinct clay films on faces of peds and lining pores; 35 percent gravel, 15 percent cobbles, and 15 percent stones; neutral.

Type location: Mono County, California; on the Toiyabe National Forest about 4 miles southwest of the town of Walker; about 1,150 feet north and 1,850 feet west of the southeast corner of section 7, T. 7 N., R. 23 E.; USGS Chris Flat 7.5 minute topographic quadrangle; 38 degrees, 27 minutes, 44.8 seconds north latitude and 119 degrees, 29 minutes, 29.1 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive days in the four months following the summer solstice; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 20 to 30 inches; includes the Bt1, Bt2, and Bt3 horizons.

Depth to base of argillic horizon: 40 to more than 60 inches.

Depth to bedrock: More than 80 inches.

Particle-size control section:

Clay content—Averages 18 to 25 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel. Lithology of fragments are mixed igneous and metamorphic rocks such as granodiorite, schist, gneiss, and andesite.

A1 and A2 horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—3 to 5 percent.

Reaction—Slightly acid or neutral.

Bt1, Bt2, and Bt3 horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly coarse sandy loam or very gravelly sandy clay loam.

Clay content—18 to 25 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt4 horizon:

Value—5 or 6 dry, 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Extremely stony sandy clay loam or extremely gravelly sandy clay loam.

Clay content—20 to 25 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Cloudburst series

The Cloudburst series consists of very deep, well drained soils that formed in till derived from igneous and metamorphic rocks. Cloudburst soils are on moraines. Slopes are 8 to 50 percent. The mean annual precipitation is about 24 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Ultic Haploxeralfs

Typical pedon: Cloudburst extremely bouldery coarse sandy loam, forestland, in a delineation of map unit 490. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 5 percent cobbles, 5 percent stones, and 7 percent boulders.

A1—0 to 3 inches; dark grayish brown (10YR 4/2) extremely bouldery coarse sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 25 percent gravel, 20 percent stones, and 20 percent boulders; slightly acid; clear smooth boundary.

A2—3 to 8 inches; dark grayish brown (10YR 4/2) extremely bouldery coarse sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine through very coarse roots; many very fine tubular and interstitial pores; 25 percent gravel, 20 percent stones, and 20 percent boulders; slightly acid; clear wavy boundary.

Bt1—8 to 16 inches; grayish brown (10YR 5/2) extremely bouldery coarse sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine through very coarse roots; many very fine tubular and interstitial pores; few faint clay bridges between sand grains; 20 percent gravel, 15 percent cobbles, 20 percent stones, and 20 percent boulders; slightly acid; clear wavy boundary.

Bt2—16 to 29 inches; pale brown (10YR 6/3) extremely bouldery sandy clay loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, many fine, many medium, and many coarse roots; common very fine tubular and interstitial pores; common faint clay bridges between sand grains; 20 percent gravel, 15 percent cobbles, 20 percent stones, and 20 percent boulders; slightly acid; clear wavy boundary.

Bt3—29 to 38 inches; pale brown (10YR 6/3) extremely cobbly coarse sandy loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine and common fine roots; common very fine tubular and interstitial pores; few faint clay bridges between sand grains; 30 percent gravel, 30 percent cobbles, and 10 percent stones; neutral; clear wavy boundary.

Bt4—38 to 60 inches; pale brown (10YR 6/3) extremely cobbly coarse sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine, few fine, few medium, and few coarse roots; common very fine tubular and interstitial pores; few faint clay bridges between sand grains; 30 percent gravel, 30 percent cobbles, and 10 percent stones; slightly acid.

Type location: Mono County, California; on the Toiyabe National Forest about 2 miles west-northwest of the Marine Mountain Warfare Training Center; about 900 feet north and 600 feet west of the southeast corner of section 15, T. 6 N, R. 22 E.; USGS Pickel Meadow 7.5 minute topographic quadrangle; 38 degrees, 21 minutes, 47.1 seconds north latitude and 119 degrees, 32 minutes, 44.7 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during fall, winter, and spring; dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Umbric epipedon thickness: 10 to 16 inches; includes the Bt1 horizon.

Depth to base of argillic horizon: 40 to more than 60 inches.

Particle-size control section:

Clay content—Averages 18 to 25 percent.

Rock fragments—Averages 60 to 80 percent, mainly greater than 3 inches in diameter (boulders, stones, and cobbles). Lithology of fragments are mixed igneous and metamorphic rocks such as granodiorite, andesite, schist, and gneiss.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—3 to 5 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Extremely bouldery coarse sandy loam or extremely cobbly sandy clay loam.

Clay content—15 to 25 percent.

Rock fragments—60 to 80 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt2 and Bt3 horizons:

Value—5 or 6 dry, 4 or 5 moist.

Chroma—3 or 4, dry or moist.

Texture—Extremely bouldery sandy clay loam or extremely cobbly coarse sandy loam.

Clay content—18 to 25 percent.

Rock fragments—60 to 80 percent.

Reaction—Slightly acid or neutral.

Bt4 horizon:

Value—5 or 6 dry, 4 or 5 moist.

Chroma—3 or 4, dry or moist.

Texture—Extremely cobbly coarse sandy loam or extremely bouldery sandy loam.

Clay content—12 to 18 percent.

Rock fragments—60 to 80 percent.

Reaction—Slightly acid or neutral.

Coldtree series

The Coldtree series consists of deep, well drained soils that formed in residuum and colluvium derived from tuff. Coldtree soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 24 inches and the mean annual temperature is about 36 degrees.

Taxonomic class: Loamy-skeletal, isotic Xeric Haplocryalfs

Typical pedon: Coldtree very gravelly loamy coarse sand, forestland, in a delineation of map unit 700. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 55 percent gravel, 5 percent cobbles, and 1 percent stones.

A—0 to 1 inch; grayish brown (10YR 5/2) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 50 percent gravel and 5 percent cobbles; very strongly acid; clear smooth boundary.

Bw/E1—1 to 4 inches; 60 percent pale brown (10YR 6/3) with 40 percent light brownish gray (10YR 6/2) extremely gravelly sandy loam, 60 percent brown (10YR 4/3) with 40 percent very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine and common very coarse roots; many very fine interstitial and common

very fine tubular pores; 60 percent gravel and 15 percent cobbles; very strongly acid, clear wavy boundary.

Bw/E2—4 to 9 inches; 80 percent very pale brown (10YR 7/3) with 20 percent light brownish gray (10YR 6/2) extremely gravelly sandy loam, 80 percent brown (10YR 5/3) with 20 percent brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine, fine, medium and coarse roots; many very fine interstitial and common very fine tubular pores; 60 percent gravel and 15 percent cobbles; very strongly acid; clear wavy boundary.

Bt1—9 to 17 inches; very pale brown (10YR 7/4) extremely gravelly sandy loam, yellowish brown (10YR 5/4) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine, fine and medium roots; many very fine interstitial and common very fine tubular pores; few faint clay films on faces of peds and lining pores; 60 percent gravel and 15 percent cobbles; 10 percent paragravel; very strongly acid; clear wavy boundary.

Bt2—17 to 24 inches; very pale brown (10YR 7/4) extremely gravelly loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine interstitial and common very fine tubular pores; few faint clay films on faces of peds and lining pores; 60 percent gravel and 20 percent cobbles; 10 percent paragravel; very strongly acid; clear wavy boundary.

Bt3—24 to 44 inches; very pale brown (10YR 7/4) extremely cobbly loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine interstitial and common very fine tubular pores; few faint clay films on faces of peds and lining pores; 55 percent gravel and 30 percent cobbles; 10 percent paragravel; very strongly acid; clear irregular boundary.

R—44 inches; hard fractured tuff.

Type location: Mono County, California; on the Toiyabe National Forest in the Sweetwater Mountains about 1.5 miles northwest of Mount Patterson; in the nonsectionized township T. 7 N., R. 24 E.; Mount Patterson USGS 7.5 minute topographic quadrangle; 38 degrees, 26 minutes, 51.0 seconds north latitude and 119 degrees, 19 minutes, 45.1 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 60 to 80 consecutive days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 35 to 40 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Ochric epipedon thickness: 6 to 12 inches; includes the A and Bw/E horizons.

Depth to base of argillic horizon: 40 to 60 inches.

Depth to bedrock: 40 to 60 inches to a lithic contact.

Sodium fluoride pH: 9.5 to 11.5.

Particle-size control section:

Clay content—Averages 10 to 18 percent.

Rock fragments—Averages 60 to 85 percent, mainly gravel and cobbles. Lithology of fragments are volcanic rocks such as tuff.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Very strongly acid through moderately acid.

Bw/E horizons:

Value—5 through 7 dry, 4 or 5 moist.

Chroma—2 or 3 dry, 2 through 4 moist.

Texture—Extremely gravelly sandy loam or extremely gravelly coarse sandy loam.

Clay content—8 to 12 percent clay.

Rock fragments—60 to 85 percent.

Reaction—Very strongly acid through moderately acid.

Bt horizons:

Value—6 or 7 dry, 4 or 5 moist.

Chroma—4 or 6, dry or moist.

Texture—Extremely gravelly sandy loam, extremely gravelly loam, extremely cobbly loam, or extremely cobbly coarse sandy loam.

Clay content—10 to 18 percent clay.

Rock fragments—60 to 85 percent.

Reaction—Very strongly acid through moderately acid.

Conway series

The Conway series consists of very deep, poorly drained soils that formed in alluvium derived from granitic and mixed sources influenced by volcanic ash. Conway soils

are on flood plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 49 degrees.

Taxonomic class: Coarse-loamy, mixed, superactive, frigid Cumulic Endoaquolls

Typical pedon: Conway loam—rangeland. (Colors are for dry soil unless otherwise noted).

A1—0 to 8 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; strong fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular and common very fine interstitial pores; 5 percent gravel; slightly alkaline; clear wavy boundary.

A2—8 to 11 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; strong fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine tubular and common very fine interstitial pores; common fine and medium distinct brown (7.5YR 4/4) moist masses of iron accumulation lining roots and pores; 5 percent gravel; slightly alkaline; abrupt wavy boundary.

A3—11 to 25 inches; grayish brown (10YR 5/2) gravelly fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; common very fine tubular and interstitial pores; common fine and medium distinct brown (7.5YR 4/4) moist masses of iron accumulation lining roots and pores; 15 percent gravel; slightly alkaline; abrupt wavy boundary.

A4—25 to 30 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common very fine and few fine roots; common very fine tubular and interstitial pores; common fine and medium distinct brown (7.5YR 4/4) moist masses of iron accumulation lining roots and pores; 10 percent gravel; slightly alkaline; abrupt wavy boundary.

C—30 to 37 inches; grayish brown (10YR 5/2) gravelly fine sandy loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine tubular and interstitial pores; many fine and medium distinct brown (7.5YR 4/4) moist masses of iron accumulation lining roots and pores; 20 percent gravel; slightly alkaline; abrupt wavy boundary.

Cg—37 to 60 inches; light brownish gray (2.5Y 6/2) gravelly coarse sandy loam with strata of gravelly

coarse sand, dark grayish brown (2.5Y 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine interstitial pores; common medium and coarse distinct brown (7.5YR 4/4) moist masses of iron accumulation lining roots and pores; 20 percent gravel; slightly alkaline.

Type location: Mono County, California; about 0.6 mile north of Bridgeport Reservoir; USGS Bridgeport 7.5 minute topographic quadrangle; 38 degrees, 20 minutes, 02.4 seconds north latitude and 119 degrees, 12 minutes, 31.6 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: The soil between a depth of 10 and 33 inches is usually dry between about August 15 and November 15 and is moist in some or all parts the rest of the time.

Soil temperature: 41 degrees. from about April 15 to November 30, and is above 47 degrees. from about May 15 to October 30.

Water table: Present at a depth of 0 to 48 inches but is typically above 12 inches at some time of the year during the growing season.

Mean annual soil temperature: 44 to 47 degrees. High water table levels contribute to a lower mean annual soil temperature than geographically associated soils.

Mollic epipedon thickness: 24 to 40 inches.

Particle-size control section:

Clay content—10 to 18 percent.

Rock fragments—Averages 15 to 30 percent, mainly pebbles. Lithology of fragments are granite and volcanic rocks such as rhyolite.

Volcanic glass content—Estimated at 5 to 15 percent glass in coarse silt through very coarse sand fractions with oxalate extractable aluminum plus one-half iron contents of less than 0.2 percent.

A horizons:

Value—3 through 5, dry, 2 or 3, moist.

Chroma—2 or 3, dry or moist.

Texture—Sandy loam, very fine sandy loam, loam, gravelly sandy loam, or cobbly sandy loam.

Rock fragments—0 to 25 percent pebbles, 0 to 20 percent cobbles.

Reaction—Slightly acid to moderately alkaline in the A1 horizon, neutral to moderately alkaline in the A2 and A3 horizons.

Organic matter content—2 to 4 percent.

Redoximorphic features—Few or common, distinct or prominent masses of iron accumulation.

C and Cg horizons:

Hue—10YR, 2.5Y, 5Y.

Value—5 through 8 dry, 4 or 5 moist.

Chroma—1 or 2, dry or moist.

Texture—Gravelly sandy loam, gravelly coarse sandy loam, or cobbly coarse sandy loam; strata of loamy sand to very cobbly loamy sand are common.

Rock fragments—10 to 30 percent, mainly pebbles.

Reaction—Neutral to moderately alkaline.

Redoximorphic features—Common or many masses of iron accumulation; redox depletion of iron is evident as the low chroma matrix in gleyed subhorizons.

Other features—Cobbly substratum phases are recognized with 35 to 60 percent rock fragments, 15 to 25 percent of which are cobbles. Texture of very cobbly coarse sandy loam occurs in such phases at depths below 40 inches.

Conwayridge series

The Conwayridge series consists of very deep, well drained soils that formed in till derived from igneous and metamorphic rocks with additions of volcanic ash.

Conwayridge soils are on moraines. Slopes are 8 to 30 percent. The mean annual precipitation is about 25 inches and the mean annual temperature is about 40 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Vitrandic Argixerolls

Typical pedon: Conwayridge extremely gravelly ashy loam, rangeland, in a delineation of map unit 560. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 50 percent gravel, 15 percent cobbles, 5 percent stones, and 5 percent boulders.

A—0 to 4 inches; grayish brown (10YR 5/2) extremely gravelly ashy loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine vesicular pores; 55 percent gravel, 15 percent cobbles, and 10 percent stones; neutral; clear wavy boundary.

Bt—4 to 11 inches; brown (10YR 5/3) extremely gravelly ashy loam, dark brown (10YR 3/3) moist; moderate

fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, many fine, and common medium roots; common very fine tubular and interstitial pores; few faint clay bridges between sand grains; 60 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.

2Bq1—11 to 22 inches; pale brown (10YR 6/3) extremely cobbly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, common fine, and common medium roots; common very fine tubular and interstitial pores; 5 percent opal coats on sand grains; 25 percent gravel, 45 percent cobbles, and 15 percent stones; neutral; clear wavy boundary.

2Bq2—22 to 37 inches; pale brown (10YR 6/3) extremely cobbly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; common very fine tubular and interstitial pores; 5 percent opal coats on sand grains; 25 percent gravel, 45 percent cobbles, and 15 percent stones; neutral; clear wavy boundary.

2Bq3—37 to 53 inches; light yellowish brown (2.5Y 6/4) extremely cobbly sandy loam, olive brown (2.5Y 4/4) moist; massive; hard, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine tubular and interstitial pores; 25 percent thin iron-manganese coats on bottom of rock fragments; 10 percent opal bridges on sand grains and 0.5 to 2 mm thick opal coats on bottoms of rock fragments; 45 percent gravel, 15 percent cobbles, and 10 percent stones; neutral; clear wavy boundary.

2Bq4—53 to 63 inches; light yellowish brown (2.5Y 6/4) extremely gravelly sandy loam, olive brown (2.5Y 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine and medium roots; common very fine interstitial and few very fine tubular pores; 50 percent iron-manganese coats on the bottoms of rock fragments; 10 percent opal coats on bottom of rock fragments; 60 percent gravel and 15 percent cobbles; neutral.

Type location: Mono County, California; about 1.9 miles southwest of Conway Summit and 100 feet east of the Toiyabe National Forest boundary; about 2,600 feet south and 100 feet east of the northwest corner of section 34, T. 3 N., R. 25 E.; USGS Lundy 7.5 minute topographic quadrangle; 38 degrees, 04 minutes, 36.4 seconds north latitude and 119

degrees, 12 minutes, 44.2 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 59 to 68 degrees.

Mean winter soil temperature: 32 to 36 degrees.

Mollic epipedon thickness: 10 to 14 inches, includes the Bt horizon.

Depth to bedrock: More than 80 inches.

Particle-size control section:

Clay content—Averages 10 to 18 percent.

Rock fragments—Averages 60 to 85 percent, mainly gravel and cobbles. Lithology of fragments are mixed igneous and metamorphic rocks such as granodiorite, andesite, schist, and gneiss.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Volcanic glass content—15 to 30 percent in coarse silt through fine sand fractions.

Bt horizon:

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly ashy loam or extremely cobbly ashy sandy loam.

Clay content—10 to 18 percent.

Rock fragments—60 to 85 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Volcanic glass content—15 to 30 percent in coarse silt through fine sand fractions.

2Bq horizons:

Hue—10YR or 2.5Y.

Value—6 or 7 dry, 4 or 5 moist.

Chroma—2 through 4, dry or moist.

Texture—Extremely gravelly sandy loam or extremely cobbly sandy loam.

Clay content—8 to 15 percent.

Rock fragments—60 to 85 percent.

Reaction—Slightly acid or neutral.

Secondary silica—5 to 15 percent as 0.5 to 2 mm thick coats on the bottom of rock fragments or as bridges between sand grains.

Corbett series

The Corbett series consists of moderately deep, somewhat excessively drained soils. Corbett soils are located on mountains. These soils formed in residuum and colluvium weathered mainly from granitic rocks. Slopes are 8 to 75 percent. The mean annual precipitation is about 25 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Mixed, frigid, Typic Xeropsamments

Typical pedon: Corbett very bouldery loamy coarse sand, forestland, in a delineation of map unit 120. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 20 percent gravel, 10 percent cobbles, 3 percent stones and 15 percent boulders, with 0 to 3 inches of pine needle litter and duff.

A1—0 to 2 inches; dark grayish brown (10YR 4/2) very bouldery loamy coarse sand, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine tubular and interstitial pores; 20 percent gravel, 5 percent cobbles, 5 percent stones and 15 percent boulders; medium acid; clear smooth boundary.

A2—2 to 9 inches; brown (10YR 5/3) very bouldery loamy coarse sand, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, medium and coarse roots; many very fine tubular and interstitial pores; 20 percent gravel, 5 percent cobbles, 5 percent stones and 15 percent boulders; medium acid; clear smooth boundary.

C1—9 to 18 inches; pale brown (10YR 6/3) gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine, fine, medium and coarse roots; many very fine and fine tubular and interstitial pores; 20 percent gravel, 5 percent cobbles; medium acid; clear smooth boundary.

C2—18 to 23 inches; pale brown (10YR 6/3) gravelly coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine, medium and coarse roots; many very fine and fine tubular and interstitial pores; 20 percent gravel, 5 percent cobbles; medium acid; clear wavy boundary.

Cr—23 inches; weathered and fractured granitic rock.

Type location: Alpine County, California; on the Toiyabe National Forest about 1,000 feet northeast of

Shingle Mill Flat; about 800 feet north and 1,400 feet west of the southeast corner of section 32, T. 11N., R. 19 E.; USGS Woodfords 7.5 minute topographic quadrangle; 38 degrees, 46 minutes, 3.6 seconds north latitude and 119 degrees, 52 minutes, 00 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 45 to 48 degrees.

Mean summer soil temperature: 55 to 62 degrees.

Depth to bedrock: 20 to 40 inches to paralithic contact.

Base saturation: 50 to 75 percent, but is greater than 60 percent in some part between 10 and 30 inches.

Control section:

Clay content—Averages 3 to 8 percent.

Rock fragments—Averages 5 to 35 percent, dominantly 2 to 5 mm diameter pebbles. Lithology of fragments is granitic rocks such as granodiorite.

A horizon:

Hue—10YR or 2.5Y.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—1 through 3, dry or moist.

Reaction—Medium acid or slightly acid.

C horizon:

Hue—10YR or 2.5Y.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—2, 3 or 4, dry or moist.

Texture—Gravelly loamy coarse sand, gravelly coarse sand, gravelly sand or gravelly loamy sand.

Corralval series

The Corralval series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed sources. Corralval soils are on alluvial fans and low stream terraces on mountain valleys. Slopes are 0 to 8 percent. The mean annual precipitation is about 35 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Aquic Haplocryolls

Typical pedon: Corralval very gravelly coarse sandy loam, rangeland, in a delineation of map unit 162. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel.

- A1—0 to 3 inches; dark grayish brown (10YR 4/2) very gravelly coarse sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine tubular and interstitial pores; 45 percent gravel; moderately acid; clear wavy boundary.
- A2—3 to 13 inches; dark grayish brown (10YR 4/2) very gravelly coarse sandy loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common very fine tubular and interstitial pores; 45 percent gravel; slightly acid; clear wavy boundary.
- A3—13 to 20 inches; dark grayish brown (10YR 4/2) very gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine through medium roots; common very fine tubular and interstitial pores; 40 percent gravel; slightly acid; clear wavy boundary.
- A4—20 to 26 inches; grayish brown (10YR 5/2) gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine through medium roots; common very fine tubular and interstitial pores; common fine and medium distinct dark yellowish brown (10YR 3/4) moist irregular masses of iron accumulation in the matrix; 25 percent gravel; slightly acid; clear wavy boundary.
- C1—26 to 45 inches; pinkish gray (7.5YR 6/2) very cobbly coarse sandy loam, brown (7.5YR 4/2) moist; massive; soft, very friable, slightly sticky and nonplastic; few very fine and common fine and medium roots; few very fine tubular and many very fine interstitial pores; many medium and coarse distinct reddish brown (5YR 4/4) moist irregular masses of iron accumulation in the matrix; 30 percent gravel and 25 percent cobbles; slightly acid; clear wavy boundary.
- C2—45 to 60 inches; 60 percent pinkish gray (7.5YR 6/2) with 40 percent yellowish red (5YR 5/6) very cobbly loamy coarse sand, 60 percent brown (7.5YR 4/3) with 40 percent yellowish red (5YR 4/6) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine interstitial pores; areas with yellowish red color are very coarse irregular masses of iron accumulation in the matrix; 25 percent gravel and 25 percent cobbles; slightly acid.

Type location: Alpine County, California; on the Toiyabe National Forest in Corral Valley about 2 miles south of Rodriguez Flat; about 350 feet north and 1,800 feet east of the southwest corner of section 33, T. 8 N., R. 22 E.; USGS Lost Cannon Peak 7.5 minute topographic quadrangle; 38 degrees, 29 minutes, 18.5 seconds north latitude and 119 degrees, 34 minutes, 02.7 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 47 to 54 degrees.

Mollic epipedon thickness: 16 to 30 inches.

Depth to seasonal aquic conditions: 20 to 40 inches.

Depth to sandy-skeletal material: 30 to 40 inches.

Particle-size control section:

Clay content—Averages 12 to 18 percent.

Rock fragments—Averages 35 to 60 percent.

Lithology of fragments are granitic rocks such as granodiorite, volcanic rocks such as tuff or andesite, and minor metamorphic rocks such as quartzite.

A1 horizon:

Value—4 or 5 dry, 2 or 3 moist.

Organic matter content—3 to 5 percent.

Reaction—Moderately acid or slightly acid.

A2, A3, and A4 horizons:

Value—4 or 5 dry, 2 or 3 moist.

Texture—Very gravelly coarse sandy loam, gravelly coarse sandy loam, or very gravelly sandy loam.

Rock fragments—25 to 60 percent.

Organic matter content—2 to 4 percent.

Reaction—Moderately acid or slightly acid.

Redoximorphic features—Redox concentrations occur as masses of iron accumulation, commonly in the A3 or A4 horizon.

C1 horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 4 or 5 moist.

Chroma—2 through 6, dry or moist.

Texture—Very cobbly coarse sandy loam or very gravelly coarse sandy loam.

Clay content—12 to 18 percent.

Rock fragments—35 to 60 percent.

Reaction—Moderately acid or slightly acid.

Redoximorphic features—Redox concentrations occur as masses of iron accumulation.

C2 horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 4 or 5 moist.

Chroma—2 through 6, dry or moist.

Texture—Very cobbly loamy coarse sand, very gravelly loamy coarse sand, or very gravelly coarse sand.

Clay content—3 to 8 percent.

Rock fragments—35 to 60 percent.

Reaction—Moderately acid or slightly acid.

Redoximorphic features—Redox concentrations occur as masses of iron accumulation.

very fine tubular and interstitial pores; common distinct clay films on faces of peds and few distinct clay films lining pores; 50 percent gravel; 10 percent paragravel; neutral; clear wavy boundary.

Cr—15 to 20 inches; weathered and fractured schist.

Type location: Mono County, California; on the Toiyabe National Forest about 2.5 miles southwest of the town of Walker; about 2,400 feet north and 1,200 feet east of the southwest corner of section 6, T. 7 N., R. 23 E.; USGS Chris Flat 7.5 minute topographic quadrangle; 38 degrees, 28 minutes, 47.8 seconds north latitude and 119 degrees, 29 minutes, 43.6 seconds west longitude, NAD27.

Range in Characteristics:

Crispy series

The Crispy series consists of shallow, well drained soils that formed in residuum and colluvium derived from metamorphic rocks. Crispy soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 18 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid, shallow Typic Argixerolls

Typical pedon: Crispy very gravelly loam, forestland, in a delineation of map unit 520. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 30 percent gravel, 5 percent cobbles, and 2 percent stones.

A1—0 to 2 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular and interstitial pores; 30 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.

A2—2 to 7 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine through coarse roots; common very fine tubular and interstitial pores; 30 percent gravel; neutral; clear wavy boundary.

Bt—7 to 15 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine through coarse roots; common

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive days in the four months following the summer solstice; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 7 to 14 inches.

Depth to bedrock: 14 to 20 inches to a paralithic contact.

The paralithic materials below the contact are weathered metamorphic rocks such as schist or gneiss.

Particle-size control section:

Clay content—Averages 18 to 25 percent.

Rock fragments—Averages 35 to 60 percent, mainly medium and coarse gravel (5 to 75 mm diameter).

Lithology of fragments are metamorphic rocks such as schist or gneiss.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt horizon:

Hue—10YR or 2.5Y.

Value—5 or 6 dry, 4 or 5 moist.

Chroma—2 through 4, dry or moist.

Texture—Very gravelly loam or very gravelly sandy clay loam.

Clay content—18 to 25 percent.

Rock fragments—35 to 60 percent.

Pararock fragments—5 to 15 percent paragravel or parachanners.

Reaction—Slightly acid or neutral.

Dab series

The Dab series consists of very deep, well drained soils that formed in colluvium and residuum derived from volcanic rocks. Dab soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 24 inches and the mean annual temperature is about 39 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Pachic Argicryolls

Typical pedon: Dab extremely gravelly sandy loam, rangeland, in a delineation of map unit 791. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 70 percent gravel and 5 percent cobbles.

A1—0 to 3 inches; grayish brown (10YR 5/2) extremely gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 70 percent gravel; slightly acid; clear smooth boundary.

A2—3 to 12 inches; grayish brown (10YR 5/2) extremely gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial and common very fine tubular pores; 60 percent gravel; slightly acid; clear wavy boundary.

Bt1—12 to 24 inches; brown (10YR 5/3) extremely gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine interstitial and common very fine tubular pores; few faint clay bridges on sand grains; 70 percent gravel; slightly acid; clear wavy boundary.

Bt2—24 to 60 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular and interstitial pores; few faint clay bridges on sand grains; 65 percent gravel; slightly acid.

Type location: Mono County, California; on the Toiyabe National Forest about 3,000 feet southeast of Nugent Cabin; about 1,400 feet north and 3,800 feet west of the southeast corner of section 18, T. 7 N., R. 25 E.; Mount Patterson USGS 7.5 minute topographic quadrangle; 38 degrees, 27 minutes, 49.3 seconds

north latitude and 119 degrees, 15 minutes, 41.5 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive days in the four months following the summer solstice; Xeric moisture regime.

Mean annual soil temperature: 42 to 45 degrees.

Mean summer soil temperature: 54 to 59 degrees.

Mollic epipedon thickness: 16 to 24 inches; includes the Bt1 horizon.

Depth to base of argillic horizon: 45 to 70 inches.

Reaction: Slightly acid or neutral.

Particle-size control section:

Clay content—18 to 25 percent.

Rock fragments—60 to 80 percent, mainly medium and coarse pebbles (5 to 75 mm diameter).

Lithology of fragments are volcanic rocks such as andesite or rhyolite.

A horizons:

Clay content—10 to 15 percent.

Value—4 or 5 dry, 2 or 3 moist.

Organic matter content—2 or 4 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly sandy loam or extremely gravelly sandy clay loam.

Clay content—18 to 25 percent.

Rock fragments—60 to 80 percent.

Structure—Fine or medium subangular blocky.

Consistence—Slightly hard or hard dry.

Organic matter content—1 or 2 percent.

Reaction—Slightly acid or neutral.

Bt2 horizon:

Chroma—3 or 4, dry or moist.

Texture—Extremely gravelly sandy loam or extremely gravelly sandy clay loam.

Clay content—18 to 25 percent.

Rock fragments—60 to 80 percent.

Structure—Fine or medium subangular blocky or is massive.

Consistence—Slightly hard or hard dry.

Reaction—Slightly acid or neutral.

Dagget series

The Dagget series consists of deep, excessively drained soils that formed in colluvium over residuum derived from granodiorite. The Dagget soils are on mountains. Slopes range from 30 to 50 percent. The mean annual precipitation is about 45 inches and the mean annual air temperature is about 39 degrees.

Taxonomic class: Sandy-skeletal, mixed Typic Cryorthents

Typical pedon: Dagget very gravelly loamy coarse sand, forestland, in a delineation of map unit 140. (Colors are for dry soils unless otherwise noted.) The soil surface is covered with a thin mantle of slightly decomposed needle duff and 45 percent gravel, 10 percent cobbles, 10 percent stones, and 1 percent boulders.

A—0 to 8 inches; grayish brown (10YR 5/2) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common fine, very fine and medium roots; many fine and very fine interstitial pores; 40 percent gravel, 10 percent cobbles, 5 percent stones; moderately acid; clear wavy boundary.

C—8 to 41 inches; light brownish gray (10YR 6/2) very gravelly loamy coarse sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine, medium and coarse roots; many fine and very fine interstitial pores; 40 percent gravel, 10 percent cobbles, 5 percent stones; moderately acid; clear wavy boundary.

Cr—41 to 50 inches; weathered granodiorite with few roots in fractures.

Type location: Alpine County, California, about 1.2 miles southeast of Monument Peak; about 300 feet north and 50 feet west of the southeast corner of Section 7, Township 12 N., Range 19E.; USGS South Lake Tahoe 7.5 minute topographic quadrangle; 38 degrees, 54 minutes, 45.1 seconds north latitude and 119 degrees, 52 minutes, 48.9 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from mid-July to early October for 60 to 80 consecutive

days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 35 to 41 Degrees.

Mean summer soil temperature: 44 to 47 degrees.

Depth to bedrock: 40 to 60 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rock such as granodiorite.

Ochric epipedon thickness: 6 to 9 inches.

Control section:

Rock fragments—35 to 75 percent, with 20 to 40 percent gravel, 5 to 20 percent cobbles, 5 to 20 percent stones and 5 to 20 percent boulders.

Clay content—Averages 1 to 5 percent.

A horizon:

Hue—10YR.

Value—4 or 5 dry; 3 through 5 moist.

Chroma—2 through 6 dry, 2 through 4 moist.

Rock fragments—35 to 70 percent with 20 to 40 percent gravel and 10 to 30 percent cobbles, stones and boulders.

Organic matter—1 to 8 percent.

Reaction—Moderately acid or slightly acid.

Base saturation—40 to 80 percent. (By ammonium acetate).

C horizon:

Hue—10YR.

Value—5 or 6 dry; 4 or 5 moist.

Chroma—2 through 6 dry, 2 through 4 moist.

Texture of the fine earth fraction—Very gravelly loamy coarse sand or very gravelly coarse sand.

Rock fragments—35 to 70 percent with 20 to 40 percent gravel and 10 to 30 percent cobbles, stones, and boulders.

Reaction— Moderately acid or slightly acid.

Delhew series

The Delhew series consists of very deep, well drained soils that formed in colluvium derived from granitic rock. Delhew soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 39 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Pachic Argicryolls

Typical pedon: Delhew very gravelly loamy coarse sand, rangeland, in a delineation of map unit 660. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with about 2 percent cobbles and 25 percent gravel.

A1—0 to 1 inches; grayish brown (10YR 5/2) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 35 percent gravel; slightly acid; clear wavy boundary.

A2—1 to 9 inches; brown (10YR 5/3) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common very fine tubular and interstitial pores; 35 percent gravel; slightly acid; clear wavy boundary.

A3—9 to 16 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine tubular and interstitial pores; 45 percent gravel; neutral; clear wavy boundary.

Bt1—16 to 27 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; moderate medium and coarse subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; few very fine and fine roots; common very fine interstitial and tubular pores; few faint clay films bridging sand grains; 55 percent gravel; neutral; clear wavy boundary.

Bt2—27 to 40 inches; light yellowish brown (10YR 6/4) extremely gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine interstitial and few very fine tubular pores; few faint clay films bridging sand grains; 70 percent gravel; neutral; clear wavy boundary.

C—40 to 60 inches; light yellowish brown (10YR 6/4) extremely gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common very fine tubular and interstitial pores; 65 percent gravel; neutral.

Type location: Mono County, California; on the Toiyabe National Forest about 2 miles north of Lobdell Lake; about 1,500 feet north and 50 feet west of the southeast corner of section 9, T. 7 N., R. 24 E.; Mount Patterson USGS 7.5 minute topographic quadrangle; 38 degrees, 28 minutes, 32.8 seconds

north latitude and 119 degrees, 21 minutes, 20.6 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive days in the four months following the summer solstice; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 42 to 46 degrees.

Mean summer soil temperature: 54 to 59 degrees.

Mollic epipedon thickness: 16 to 40 inches; includes the Bt1 horizon or both the Bt1 and Bt2 horizons in some pedons.

Depth to base of argillic horizon: 24 to 40 inches.

Reaction: Slightly acid or neutral.

Particle-size control section:

Clay content—14 to 18 percent.

Rock fragments—50 to 80 percent, mainly fine gravel (2 to 5 mm diameter). Lithology of fragments are granitic rocks such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3 dry or moist.

Clay content—8 to 15 percent.

Organic matter content—1 to 3 percent.

Bt1 and Bt2 horizons:

Value—5 or 6 dry, 3 or 4 moist.

Texture—Very gravelly coarse sandy loam or extremely gravelly coarse sandy loam.

Clay content—14 to 18 percent.

Rock fragments—50 to 80 percent.

Structure—Weak or moderate subangular blocky.

Consistence—Soft or slightly hard dry.

Organic matter content—1 or 2 percent.

Devada series

The Devada series consists of shallow, well drained soils that formed in residuum weathered dominantly from volcanic rock with additions of loess and volcanic ash. Devada soils are on footslopes, sideslopes, shoulders, ridges and summits of plateaus, mountains and hills. Slopes are 2 to 8 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 47 degrees.

Taxonomic class: Clayey, smectitic, mesic Lithic Argixerolls

Typical pedon: Devada very cobbly loam, rangeland, in adjacent Douglas County. (Colors are for dry soil, unless otherwise stated.)

A1—0 to 1 inch; grayish brown (10YR 5/2) very cobbly loam, very dark grayish brown (10YR 3/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 25 percent pebbles, 20 percent cobbles, slightly acid (pH 6.2); abrupt smooth boundary.

A2—1 to 4 inches; grayish brown (10YR 5/2) very cobbly loam, very dark grayish brown (10YR 3/2) moist; moderate coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine interstitial pores; 25 percent pebbles, 20 percent cobbles; slightly acid (pH 6.4); abrupt smooth boundary.

Bt1—4 to 5 inches; brown (10YR 5/3) clay loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard, very friable, very sticky and plastic; few fine roots; very few fine tubular pores; common moderately thick clay films on peds, neutral (pH 6.8); abrupt smooth boundary.

Bt2—5 to 13 inches; brown (10YR 4/3) gravelly clay, dark brown (10YR 3/3) moist; strong medium and coarse angular blocky structure; hard, firm, very sticky and very plastic; few fine roots; few fine tubular pores; many moderately thick clay films on peds and lining pores; 15 percent pebbles; neutral (pH 6.8); very abrupt irregular boundary.

R—13 inches; rhyolite.

Type location: Douglas County, Nevada; south of Holbrook Junction near Wild Oat Mountain; about 20 miles southeast of Minden, Nevada, on a southwest slope; about 2,000 feet east and 1,000 feet north of the southwest corner of section 20, T. 10 N., R. 22 E; 38 degrees, 42 minutes, 44 seconds north latitude and 119 degrees, 32 minutes and 30 seconds west longitude, NAD 1927; Topaz Lake, CA quadrangle.

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry in summer through late fall. (Aridic)

Soil temperature: 47 to 53 degrees.

Mollic epipedon: 7 to 20 inches thick, includes all or part of the argillic horizon.

Combined thickness of A and Bt horizons: 12 to 20 inches.

Depth to bedrock: 12 to 20 inches.

Other features: Some pedons have thin E or E/B horizons.

Control section:

Clay content—40 to 60 percent.

Rock fragments—0 to 30 percent, mainly pebbles.

A horizon:

Value—4 or 5 dry, 2 or 3 moist. Some pedons have a thin surface layer with value of 6 dry, but when the upper 7 inches are mixed, value is less than 5.5 dry.

Chroma—2 or 3.

Reaction—Slightly acid to slightly alkaline.

Bt horizon:

Hue—5YR, 7.5YR or 10YR.

Value—4 through 6 dry, 3 or 4 moist.

Chroma—2 through 4.

Texture—Dominantly clay or gravelly clay, commonly with thin subhorizons of clay loam.

Structure—Prismatic, angular blocky, subangular blocky.

Consistence—Slightly hard to very hard, dry; sticky to very sticky, wet.

Reaction—Neutral or slightly alkaline.

Other features—Some pedons have thin silica coats on peds and rock fragments in the lower part of the Bt horizon.

Dogbed series

The Dogbed series consists of very deep, well drained soils that formed in colluvium derived from tuff, tuff-breccia, and andesite. Dogbed soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Pachic Argixerolls

Typical pedon: Dogbed very gravelly sandy loam, rangeland, in a delineation of map unit 440. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 50 percent gravel.

A1—0 to 5 inches; dark grayish brown (10YR 4/2) very gravelly sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; many very fine interstitial pores; 40 percent gravel; neutral; clear wavy boundary.

A2—5 to 14 inches; dark grayish brown (10YR 4/2) very gravelly sandy loam, very dark brown (10YR 2/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine through coarse roots; common very fine tubular and interstitial pores; 40 percent gravel; neutral; clear wavy boundary.

Bt1—14 to 31 inches; grayish brown (10YR 5/2) very gravelly sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine through medium roots; common very fine tubular and interstitial pores; common distinct clay films on faces of peds and lining pores; 50 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.

Bt2—31 to 38 inches; brown (10YR 5/3) very gravelly sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine through medium roots; common very fine tubular and interstitial pores; common distinct clay films on faces of peds and lining pores; 45 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.

Bt3—38 to 50 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; few very fine and fine roots; common very fine tubular and interstitial pores; common distinct clay films on faces of peds and lining pores; 50 percent gravel; neutral; clear wavy boundary.

Bt4—50 to 60 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular and interstitial pores; common faint clay films bridging sand grains; 55 percent gravel; neutral.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.5 mile southeast of Colorado Hill; about 550 feet north and 200 feet west of the southeast corner of section 31, T. 10 N., R. 21 E.; USGS Heenan Lake 7.5 minute topographic quadrangle; 38 degrees, 39 minutes, 52.0 seconds north latitude and 119 degrees, 42 minutes, 10.6 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 30 to 50 inches, includes most subhorizons of the argillic horizon.

Depth to bedrock: 60 to 80 inches.

Sodium fluoride pH: 8.5 to 9.0.

Particle-size control section:

Clay content—Averages 18 to 27 percent.

Rock fragments—Averages 35 to 60 percent.

Lithology of fragments are volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—3 to 5 percent.

Reaction—Slightly acid or neutral.

Bt1, Bt2, and Bt3 horizons:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly sandy clay loam, very gravelly sandy loam, or very gravelly loam.

Clay content—18 to 27 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral

Bt4 horizon:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly sandy loam or very gravelly sandy clay loam.

Clay content—15 to 25 percent.

Rock fragments—35 to 60 percent.

Organic matter content—0.5 to 1 percent.

Reaction—Slightly acid or neutral.

Domehill series

The Domehill series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from andesite with surficial additions of eolian volcanic ash. Domehill soils are on mountains. Slopes are 4 to 30 percent. The mean annual

precipitation is about 15 inches and the mean annual temperature is about 44 degrees.

Taxonomic class: Ashy-skeletal, glassy, frigid Lithic Argixerolls

Typical pedon: Domehill very gravelly ashy sandy loam, rangeland, in a delineation of map unit 870. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 35 percent gravel, 10 percent cobbles, and 2 percent stones.

A—0 to 2 inches; brown (10YR 5/3) very gravelly ashy sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial and common very fine tubular pores; 35 percent gravel; slightly acid; clear wavy boundary.

Bt1—2 to 8 inches; brown (7.5YR 4/3) very gravelly ashy loam, dark brown (7.5YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable; slightly sticky and slightly plastic; many very fine, many fine, and common medium roots; common very fine tubular and interstitial pores; 35 percent gravel; few faint clay bridges between sand grains; neutral; clear wavy boundary.

Bt2—8 to 13 inches; brown (7.5YR 5/3) very gravelly ashy clay loam, dark brown (7.5YR 3/2) moist; moderate fine and medium subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; many very fine and fine roots; common very fine tubular and interstitial pores; many distinct clay films on faces of peds and lining pores; 45 percent gravel and 10 percent cobbles; neutral; abrupt irregular boundary.

R—13 inches; hard, unweathered andesite.

Type location: Mono County, California; on the Toiyabe National Forest about 2 miles southeast of the Masonic Town site; about 640 feet north and 600 feet east of the southwest corner of section 26, T. 6 N., R. 26 E.; USGS Dome Hill 7.5 minute topographic quadrangle; 38 degrees, 20 minutes, 03.0 seconds north latitude and 119 degrees, 05 minutes, 47.2 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in winter and spring, dry from July through October; Aridic moisture regime that borders on xeric.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 7 to 14 inches; includes the Bt1 and Bt2 horizons.

Depth to bedrock: 7 to 14 inches to a lithic contact.

Volcanic glass content: 35 to 60 percent in the coarse silt through fine sand fractions.

Particle-size control section:

Clay content—Averages 18 to 27 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel. Lithology of fragments is mainly andesite.

A horizon:

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Hue—10YR or 7.5YR.

Value—4 or 5 dry.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly ashy sandy loam, very gravelly ashy sandy clay loam, or very gravelly ashy loam.

Clay content—18 to 25 percent.

Organic matter content—1 to 3 percent.

Rock fragments—35 to 60 percent.

Bt2 horizon:

Hue—10YR or 7.5YR.

Value—4 or 5 dry.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly ashy loam, very gravelly ashy sandy clay loam, or very gravelly ashy clay loam.

Clay content—20 to 30 percent.

Organic matter content—1 or 2 percent.

Rock fragments—50 to 60 percent.

Duco series

The Duco series consists of shallow, well drained soils that formed in colluvium and residuum derived dominantly from volcanic rocks. Duco soils are on structural benches, hills, and mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 48 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Lithic Argixerolls

Typical pedon: Duco very stony loam, forestland, in adjacent Douglas County. (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches; grayish brown (10YR 5/2) very stony loam, very dark brown (10YR 2/2) moist; weak medium granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; common very fine vesicular and few fine tubular pores; 45 percent stones; neutral (pH 6.6); abrupt smooth boundary.

A2—2 to 5 inches; dark grayish brown (10YR 4/2) gravelly loam, very dark brown (10YR 2/2) moist; moderate medium granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine and few medium and coarse roots; many very fine tubular pores; 20 percent pebbles and 5 percent stones; neutral (pH 6.8); abrupt wavy boundary.

Bt1—5 to 10 inches; dark grayish brown (10YR 4/2) gravelly loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many very fine and fine, and few medium roots; common very fine tubular pores; few faint clay films coating and bridging sand grains; 20 percent pebbles; neutral (pH 6.8); abrupt wavy boundary.

Bt2—10 to 19 inches; brown (10YR 5/3) very gravelly clay loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine, fine and medium roots; many very fine tubular pores; many distinct clay films on faces of peds; 40 percent pebbles and 10 percent cobbles; neutral; abrupt wavy boundary.

R—19 inches; hard fractured andesite; common distinct clay films lining fracture planes; few fine roots in fractures.

Type location: Douglas County, Nevada; about 9 miles southeast of Gardnerville on a northeast-facing slope in the hills west of Carters Station; about 1,000 feet west and 1,600 feet north of the southeast corner of section 7, T. 11 N., R. 21 E.; USGS Carters Station 7.5 minute topographic quadrangle; 38 degrees, 49 minutes, 42 seconds north latitude and 119 degrees, 39 minutes, 46 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually moist in winter and spring, dry in summer through late fall; aridic moisture regime that borders on xeric.

Mean annual soil temperature: 47 to 54 degrees.

Mollic epipedon thickness: 7 to 20 inches, commonly includes the Bt1 horizon.

Depth to base of argillic horizon: 10 to 20 inches.

Depth to lithic contact: 10 to 20 inches to a lithic contact.

Particle-size control section:

Clay content—Averages 27 to 35 percent.

Rock fragments—35 to 80 percent total with 20 to 70 percent pebbles, 0 to 20 percent cobbles, and 0 to 40 percent stones. Stones are usually in the Bt2 horizon. Lithology of fragments are volcanic rocks such as andesite or rhyolite.

Reaction—Slightly acid to slightly alkaline.

Other features—Some pedons have only one Bt horizon constituting the argillic horizon.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—1 through 3, dry or moist.

Organic matter content—1 to 3 percent.

Bt1 horizon:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Fine-earth texture—Loam, sandy clay loam, or clay loam.

Rock fragments—20 to 80 percent, mainly pebbles.

Some pedons are dominated by stones.

Structure—Subangular blocky or angular blocky.

Consistence—Slightly hard or hard, slightly sticky or moderately sticky, slightly plastic or moderately plastic.

Organic matter content—1 or 2 percent.

Bt2 horizon:

Hue—10YR or 7.5YR.

Value—4 through 6 dry, 2 through 4 moist.

Chroma—2 through 4, dry or moist.

Structure—Moderate or strong, fine or medium, subangular or angular blocky.

Dunderberg series

The Dunderberg series consists of very deep, well drained soils that formed in till derived from igneous and metamorphic rocks with additions of volcanic ash.

Dunderberg soils are on moraines. Slopes are 8 to 30 percent. The mean annual precipitation is about 30 inches and the mean annual temperature is about 39 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Vitrandic Haplocryolls

Typical pedon: Dunderberg very gravelly ashy sandy loam, rangeland, in a delineation of map unit 560. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 55 percent gravel, 2 percent stones, and 2 percent boulders.

- A1—0 to 5 inches; dark grayish brown (10YR 4/2) very gravelly ashy sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine roots; common very fine interstitial pores; 55 percent gravel; slightly acid; clear smooth boundary.
- A2—5 to 9 inches; dark grayish brown (10YR 4/2) extremely gravelly ashy sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and many fine roots; common very fine tubular and common very fine and fine interstitial pores; 55 percent gravel and 15 percent cobbles; slightly acid; clear wavy boundary.
- A3—9 to 19 inches; dark grayish brown (10YR 4/2) extremely cobbly ashy sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and many fine roots; common very fine tubular and common very fine and fine interstitial pores; 40 percent gravel and 45 percent cobbles; slightly acid; clear wavy boundary.
- Bw1—19 to 28 inches; brown (10YR 5/3) extremely cobbly ashy sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and common fine roots; common very fine tubular and common very fine and fine interstitial pores; 50 percent gravel and 35 percent cobbles; slightly acid; clear wavy boundary.
- Bw2—28 to 39 inches; brown (7.5YR 5/4) extremely gravelly ashy sandy loam, dark brown (7.5YR 3/4) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and few fine roots; common very fine tubular and common very fine and fine interstitial pores; few faint clay bridges between sand grains; 65 percent gravel and 20 percent cobbles; slightly acid; clear wavy boundary.
- Bw3—39 to 60 inches; yellowish brown (10YR 5/4) extremely gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, few fine, and few medium roots; common very fine interstitial pores; 65 percent gravel and 20 percent cobbles; slightly acid.

Type location: Mono County, California; on the Toiyabe National Forest about 2.8 miles southwest of Conway Summit; about 1,450 feet north and 150 feet east of the southwest corner of section 33, T. 3 N., R. 25 E.; USGS Lundy 7.5 minute topographic quadrangle; 38 degrees, 04 minutes, 25.0 seconds north latitude and 119 degrees, 13 minutes, 49.2 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October; Xeric moisture regime.
Mean annual soil temperature: 44 to 47 degrees.
Mean summer soil temperature: 53 to 59 degrees.
Mollic epipedon thickness: 16 to 30 inches; includes the Bw1 horizon.

Particle-size control section:

Clay content—Averages 8 to 18 percent.
 Rock fragments—Averages 60 to 85 percent, mainly gravel and cobbles. Lithology of fragments are mixed igneous and metamorphic rocks such as granodiorite, andesite, schist, and gneiss.

A1 and A2 horizons:

Value—4 or 5 dry, 2 or 3 moist.
 Chroma—2 or 3, dry or moist.
 Organic matter content—3 to 5 percent.
 Reaction—Slightly acid or neutral.
 Volcanic glass content—15 to 45 percent in coarse silt through fine sand fractions.

A3 and Bw1 horizons:

Value—4 or 5 dry, 2 or 3 moist.
 Chroma—2 or 3, dry or moist.
 Organic matter content—2 to 4 percent.
 Reaction—Slightly acid or neutral.
 Volcanic glass content—15 to 30 percent in coarse silt through fine sand fractions.

Bw2 horizon:

Hue—7.5YR through 2.5Y.
 Value—5 through 7 dry, 3 through 5 moist.
 Chroma—3 or 4, dry or moist.
 Texture—Extremely cobbly ashy sandy loam or extremely gravelly ashy sandy loam.
 Clay content—8 to 18 percent.
 Rock fragments—60 to 85 percent.
 Reaction—Slightly acid or neutral.
 Volcanic glass content—15 to 30 percent in coarse silt through fine sand fractions.

Bw3 horizon:

Hue—7.5YR through 2.5Y.

Value—5 through 7 dry, 3 through 5 moist.

Chroma—3 or 4, dry or moist.

Texture—Extremely cobbly sandy loam or extremely gravelly sandy loam.

Clay content—8 to 18 percent.

Rock fragments—60 to 85 percent.

Reaction—Slightly acid or neutral.

Elaero series

The Elaero series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from granitic rock. Elaero soils are on mountains. Slopes are 4 to 75 percent. The mean annual precipitation is about 23 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Typic Argixerolls

Typical pedon: Elaero very gravelly loamy coarse sand, rangeland, in a delineation of map unit 530. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 20 percent gravel, 5 percent cobbles, and 7 percent stones.

A1—0 to 2 inches; grayish brown (10YR 5/2) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 35 percent gravel, 5 percent cobbles, and 10 percent stones; slightly acid; clear smooth boundary.

A2—2 to 6 inches; brown (10YR 5/3) very gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and many fine roots; common very fine tubular and many very fine interstitial pores; 35 percent gravel, 10 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

Bt1—6 to 10 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, common fine, and common medium roots; common very fine tubular and interstitial pores; few faint clay bridges between sand grains; 35 percent gravel, 10 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

Bt2—10 to 16 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; common very fine and common fine roots; common very fine tubular and interstitial pores; common faint clay bridges bridging sand grains and few distinct clay films on faces of peds; 45 percent gravel, 10 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

Bt3—16 to 21 inches; brown (10YR 5/3) very gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; moderate fine subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; few very fine, few fine, and common medium roots; common very fine tubular and interstitial pores; common distinct clay films on faces of peds; 35 percent gravel and 15 percent cobbles; slightly acid; clear wavy boundary.

Cr—21 to 25 inches; weathered granodiorite.

Type location: Mono County, California; on the Toiyabe National Forest about 1 mile west of Huntoon Valley; about 400 feet north and 1,600 feet east of the southwest corner of section 9, T. 5 N., R. 24 E.; USGS Mount Jackson 7.5 minute topographic quadrangle; 38 degrees, 18 minutes, 5.5 seconds north latitude and 119 degrees, 20 minutes, 7.4 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 10 to 20 inches; includes the Bt1 and Bt2 horizons.

Depth to bedrock: 20 to 40 inches to a paralithic contact. The paralithic materials below the contact are weathered granitic rock.

Particle-size control section:

Clay content—Averages 12 to 18 percent.

Rock fragments—Averages 35 to 60 percent, mainly fine (2 to 5 mm diameter) gravel. Lithology of fragments are granitic rocks such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt1 and Bt2 horizons:

Hue—10YR or 7.5YR.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly sandy loam or very gravelly coarse sandy loam.

Clay content—12 to 18 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt3 horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Very gravelly sandy loam or very gravelly coarse sandy loam.

Clay content—12 to 18 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Epvip series

The Epvip series consists of shallow, well drained soils that formed in eolian volcanic ash over residuum and colluvium derived from andesitic rock, with additions of aeolian volcanic ash. Epvip soils are on mountains and hills. Slopes are 4 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 44 degrees.

Taxonomic class: Ashy-skeletal, glassy, frigid, shallow Vitrandic Argixerolls

Typical pedon: Epvip very gravelly ashy sandy loam, rangeland, in a delineation of map unit 872. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 50 percent gravel, 5 percent cobbles and 1 percent stones

A—0 to 4 inches; grayish brown (10YR 5/2) very gravelly ashy sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial pores; 40 percent gravel; neutral; clear wavy boundary

Bt1—4 to 8 inches; brown (10YR 5/3) very gravelly ashy sandy clay loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, moderately sticky and moderately plastic; many very fine, fine and medium roots; common very fine tubular and interstitial pores; common faint clay films bridging sand grains; 55 percent gravel; neutral; clear wavy boundary.

Bt2—8 to 12 inches; brown (10YR 5/3) very gravelly ashy clay loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine, fine and medium roots; common very fine tubular and interstitial pores; common faint clay films bridging sand grains and few distinct clay films coating ped faces and lining pores; 55 percent gravel; neutral, clear wavy boundary.

Bt3—12 to 16 inches; pale brown (10YR 6/3) very gravelly ashy sandy clay loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine and fine and few medium roots; common very fine tubular and interstitial pores; many distinct clay films coating ped faces and lining pores; 55 percent gravel, 10 percent paragravel; neutral; clear irregular boundary.

Cr—16 to 20 inches; weathered altered andesitic tuff bedrock.

Type location: Mono County, California; on the Toiyabe National Forest about 3 miles east of Bridgeport Reservoir; about 200 feet south and 700 feet east of the northwest corner of section 31, T. 6 N., R. 25 E.; Bridgeport USGS 7.5 minute topographic quadrangle; 38 degrees, 19 minutes, 54.5 seconds north latitude and 119 degrees, 09 minutes, 25.2 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually moist in winter, spring, and early summer; dry in summer and fall, but moist intermittently in the surface horizons due to summer convection storms; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 7 to 14 inches, includes the Bt1 horizon but may include the Bt2 horizon in some pedons.

Depth to base of argillic horizon: 14 to 20 inches.

Depth to bedrock: 14 to 20 inches to a paralithic contact. The paralithic materials below the contact are weathered andesitic rock. Hard bedrock is typically within 30 inches of the soil surface.

Particle-size control section:

Clay content—25 to 35 percent.

Rock fragments—35 to 50 percent, mainly pebbles over 50 percent of which are larger than 5 mm. in diameter. Lithology of fragments is volcanic rock such as andesite.

A horizons:

Value—Dominantly 5 dry, but may be 6 in the upper part of the A1 horizon.

Chroma—2 or 3, dry or moist.

Organic matter content—2 or 3 percent.

Reaction—Slightly acid or neutral.

Volcanic glass content—30 to 75 percent in coarse silt through fine sand fractions.

Bt1 horizon:

Hue—10YR or 7.5YR.

Chroma—2 or 3 dry or moist.

Texture—Very gravelly ashy sandy clay loam, very gravelly ashy clay loam, or very gravelly ashy loam.

Clay content—25 to 35 percent.

Rock fragments—35 to 50 percent.

Organic matter content—1 or 2 percent.

Reaction—Slightly acid or neutral.

Volcanic glass content—30 to 60 percent in coarse silt through fine sand fractions.

Bt2 horizon:

Chroma—3 or 4, dry or moist.

Texture—Very gravelly ashy sandy clay loam, very gravelly ashy clay loam, or very gravelly ashy loam.

Clay content—25 to 35 percent.

Rock fragments—35 to 50 percent.

Organic matter content—0.5 to 2 percent.

Reaction—Slightly acid or neutral.

Volcanic glass content—30 to 60 percent in coarse silt through fine sand fractions.

Bt3 horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Very gravelly ashy sandy clay loam, very gravelly ashy clay loam, or very gravelly ashy loam.

Clay content—25 to 35 percent.

Rock fragments—35 to 50 percent.

Organic matter content—0.5 to 1 percent.

Reaction—Slightly acid or neutral.

Volcanic glass content—30 to 60 percent in coarse silt through fine sand fractions.

Fisherdig series

The Fisherdig series consists of shallow to a duripan, well drained soils that formed in alluvium derived mainly

from volcanic rocks with surficial additions of eolian volcanic ash. Fisherdig soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 13 inches and the mean annual temperature is about 45 degrees.

Taxonomic class: Clayey-skeletal, smectitic, frigid, shallow Vitritorrandic Durixerolls

Typical pedon: Fisherdig very gravelly ashy sandy loam, rangeland, in a delineation of map unit 900. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 35 percent gravel, 15 percent cobbles, and 3 percent stones.

A1—0 to 2 inches; pale brown (10YR 6/3) very gravelly ashy sandy loam, dark brown (10YR 3/3) moist; strong thick platy structure; slightly hard, very friable, nonsticky and nonplastic; common very fine roots; many very fine vesicular pores; 30 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.

A2—2 to 5 inches; brown (10YR 5/3) very gravelly ashy sandy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine and fine roots; common very fine tubular and interstitial pores; 40 percent gravel, 10 percent cobbles, and 5 percent stones; neutral; clear wavy boundary.

Bt1—5 to 8 inches; brown (7.5YR 5/3) very gravelly ashy clay loam, dark brown (7.5YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common very fine, fine and medium roots; common very fine tubular and interstitial pores; many distinct clay films on faces of peds and lining pores; 30 percent gravel, 10 percent cobbles, and 5 percent stones; neutral; abrupt wavy boundary.

Bt2—8 to 16 inches; brown (7.5YR 5/3) very cobbly clay, brown (7.5YR 4/3) moist; strong fine prismatic structure parting to strong medium angular blocky; very hard, firm, very sticky and very plastic; few very fine and fine roots; few very fine tubular and interstitial pores; common prominent pressure cutans on faces of peds; 20 percent gravel and 15 percent cobbles; neutral; clear wavy boundary.

Btq—16 to 19 inches; light brown (7.5YR 6/3) very gravelly clay loam, brown (7.5YR 4/3) moist; strong medium angular blocky structure; very hard, firm, very sticky and moderately plastic; few very fine roots; few very fine tubular and interstitial pores; common distinct clay films on faces of peds and lining pores; 40 percent of peds are brittle with thin

silica coats on faces of peds; 30 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.

Bkqm—19 to 30 inches; very pale brown (10YR 7/3) cemented material, brown (10YR 4/3) moist; moderate very thick platy structure; very rigid, rigid, strongly cemented by silica with discontinuous 1 to 2 mm thick indurated laminar cap; very few very fine roots in fractures; 15 percent fine black (10YR 2/1) masses of manganese in the matrix; secondary carbonates segregated as 5 percent filaments in the matrix; gradual wavy boundary.

Bqm1—30 to 46 inches; light yellowish brown (10YR 6/4) cemented material, dark yellowish brown (10YR 3/4) moist; weak very thick platy structure; extremely hard, extremely firm, moderately cemented by silica; 10 percent silica coats on rock fragments and 25 percent silica coats on faces of peds; gradual wavy boundary.

Bqm2—46 to 60 inches; light yellowish brown (10YR 6/4) cemented extremely gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; weak medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; continuous weak silica cementation; few very fine tubular and interstitial pores; 40 percent silica coats on faces of peds; 60 percent gravel, 15 percent cobbles; and 2 percent stones; neutral.

Type location: Mono County, California; on the Toiyabe National Forest about 2 miles east of the Bridgeport Reservoir dam; about 2,450 feet south and 350 feet east of the northeast corner of section 36, T. 6 N., R. 25 E.; USGS Bridgeport 7.5 minute topographic quadrangle; 38 degrees, 19 minutes, 30.6 seconds north latitude and 119 degrees, 10 minutes, 23.4 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in winter and spring, dry from July through October, Aridic moisture regime that borders on xeric.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 7 to 12 inches; includes the Bt1 horizon.

Depth to duripan: 14 to 20 inches.

Depth to bedrock: More than 80 inches.

Particle-size control section:

Clay content—Averages 35 to 45 percent.

Rock fragments—35 to 60 percent, mainly gravel and cobbles. Lithology of rock fragments is mainly volcanic rocks such as andesite.

A horizons:

Value—5 or 6 dry; value 6 only occurs in the A1 horizon and is 5 when the upper 7 inches of the soil is mixed.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Volcanic glass content—30 to 60 percent in coarse silt through fine sand fractions.

Bt1 horizon:

Hue—10YR or 7.5YR.

Texture—Very gravelly ashy clay loam, very cobbly ashy sandy loam, or very gravelly ashy sandy loam.

Clay content—18 to 30 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Organic matter content—1 to 3 percent.

Volcanic glass content—10 to 35 percent in the coarse silt through fine sand fractions.

Oxalate Al + 1/2 oxalate iron—0.2 to 0.4 percent.

Bt2 horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Very cobbly clay or very gravelly clay.

Clay content—40 to 55 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Btq horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Very gravelly clay loam or very cobbly clay loam.

Clay content—27 to 35 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Bkqm horizon:

Cementation—Continuous strongly silica cemented matrix with discontinuous 1 to 4 mm thick indurated laminar cap of silica on upper surface.

Rock fragments—50 to 80 percent, dominantly gravel and cobbles.

Identifiable secondary carbonates—2 to 10 percent filaments.

Bqm1 horizon:

Cementation—Continuous moderately silica cemented matrix.
 Rock fragments—50 to 80 percent, dominantly gravel and cobbles.

Bqm2 horizon:

Cementation—Continuous weakly silica cemented matrix.
 Texture—Extremely gravelly sandy loam or very gravelly sandy loam.
 Clay content—12 to 18 percent.
 Rock fragments—50 to 80 percent.

Fishsnooze series

The Fishsnooze series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from andesite, tuff, and tuff-breccia. Fishsnooze soils are on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 45 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, isotic Xeric Dystrocrypts

Typical pedon: Fishsnooze very gravelly peaty coarse sandy loam, forestland, in a delineation of map unit 250. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 2 inches of undecomposed forest duff along with 35 percent gravel and 5 percent cobbles.

A1—0 to 1 inch; dark grayish brown (10YR 4/2) very gravelly peaty coarse sandy loam, very dark brown (10YR 2/2) moist; moderate medium platy structure; soft, very friable, slightly sticky and nonplastic; common fine interstitial pores; 35 percent gravel and 5 percent cobbles; common very fine and fine roots; very strongly acid; abrupt wavy boundary.

A2—1 to 9 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and many medium and coarse; common very fine interstitial and tubular pores; 45 percent gravel; very strongly acid; clear wavy boundary.

A3—9 to 13 inches; brown (10YR 5/3) extremely gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common

very fine roots and many medium and coarse; common very fine interstitial and tubular pores; 50 percent gravel and 15 percent cobbles; very strongly acid; clear wavy boundary.

Bw—13 to 35 inches; brown (10YR 5/3) extremely cobbly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots and many fine to coarse; common very fine interstitial and tubular pores; 45 percent gravel and 40 percent cobbles; strongly acid; clear wavy boundary.

R—35 inches; hard andesite.

Type location: Alpine County, California; on the Toiyabe National Forest about 1.5 miles northwest of Lost Lakes; about 2,250 feet south and 150 feet east of the northwest corner of section 36, T. 10 N., R. 18 E.; USGS Carson Pass 7.5 minute topographic quadrangle; 38 degrees, 40 minutes, 11.7 seconds north latitude and 119 degrees, 57 minutes, 39.0 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Umbric epipedon thickness: 7 to 16 inches.

Depth to bedrock: 20 to 40 inches to a lithic contact.

Sodium fluoride pH: 10.0 to 11.5.

Particle-size control section:

Clay content—Averages 12 to 18 percent.

Rock fragments—Averages 60 to 80 percent, dominantly gravel and cobbles. Lithology of fragments are andesite, tuff, or tuff-breccia.

A1 horizon:

Organic matter content—10 to 18 percent.

Reaction—Very strongly acid or strongly acid.

Other features—Some pedons have A1 horizons with less than 10 percent organic matter and do not have the peaty texture modifier.

A2 and A3 horizons:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly coarse sandy loam, extremely gravelly sandy loam, or very gravelly coarse sandy loam.

Organic matter content—2 to 10 percent.
Reaction—Very strongly acid or strongly acid.

Bw horizons:

Hue—10YR or 7.5YR.
Value—5 or 6 dry, 3 or 4 moist.
Chroma—3 or 4, dry or moist.
Texture—Extremely cobbly coarse sandy loam or extremely gravelly sandy loam.
Clay content—12 to 18 percent.
Rock fragments—60 to 85 percent.
Reaction—Very strongly acid or strongly acid.

Flex series

The Flex series consists of very shallow, well drained soils that formed in residuum from altered andesite and metavolcanic rock. Flex soils are located on mountains. The slopes are 30 to 50 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 48 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic, shallow Xeric Haplargids

Typical pedon: Flex very gravelly sandy loam, rangeland, in a delineation of map unit 630. (Colors are for dry soil unless otherwise noted). The soil surface is covered with 40 percent gravel, 10 percent cobbles and 3 percent stones.

A1—0 to 2 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 45 percent gravel; neutral; clear wavy boundary.

Bt1—2 to 5 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots; common fine and very fine tubular and interstitial pores; few faint clay films bridging sand grains; 45 percent gravel; neutral; clear wavy boundary.

Bt2—5 to 10 inches; pale brown (10YR 6/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine and coarse roots; common fine and very fine tubular and interstitial pores; common faint clay films bridging

sand grains; 45 percent gravel; neutral; clear irregular boundary.

Cr—10 to 16 inches; highly weathered gneiss bedrock.

Type location: Mono County, California; on the Toiyabe National Forest about 1 mile southeast of Round Mountain; about 400 feet north and 2,300 feet west of the southeast corner of section 22, T. 9 N.; R. 23 E.; USGS Risue Canyon 7.5 minute topographic quadrangle; 38 degrees, 36 minutes, 19.3 seconds north latitude and 119 degrees, 26 minutes, 09.2 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually moist from late November through May, dry from June through mid-October; Aridic moisture regime that borders on xeric.

Mean annual soil temperature: 49 to 52 degrees.

Ochric epipedon thickness: 1 to 5 inches.

Depth to bedrock: 6 to 12 inches to a paralithic contact.

Particle-size control section:

Clay content—15 to 25 percent.

Rock fragments—35 to 50 percent, dominantly gravel.

Lithology of fragments are altered andesite and metavolcanic rocks such as gneiss.

A horizon:

Value—5 or 6 dry, 3 or 4 moist.

Chroma—2 or 3, dry or moist.

Reaction—Slightly acid or neutral.

Bt horizons:

Hue—10YR or 7.5YR

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 through 6, dry or moist.

Texture—Very gravelly sandy loam or very gravelly sandy clay loam.

Clay content—18 to 27 percent.

Rock fragments—35 to 50 percent, mainly gravel.

Structure—Weak to moderate, medium to fine angular blocky or subangular blocky.

Reaction—Slightly acid or neutral.

Florand series

The Florand series consists of deep, well drained soils that formed in colluvium over residuum derived from andesitic tuff and tuff-breccia. Florand soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 45 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, isotic Xeric
Dystrocryepts

Typical pedon: Florand very gravelly peaty sandy loam, forestland, in a delineation of map unit 250. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 1 inch of undecomposed conifer duff along with 35 percent gravel and 1 percent stones.

A1—0 to 1 inch; dark grayish brown (10YR 4/2) very gravelly peaty sandy loam, very dark brown (10YR 2/2) moist; moderate medium platy structure; soft, very friable, slightly sticky and nonplastic; common fine interstitial pores; 35 percent gravel and 1 percent stones; strongly acid; clear wavy boundary.

A2—1 to 4 inches; dark grayish brown (10YR 4/2) very gravelly sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular and interstitial pores; 35 percent gravel; strongly acid; clear wavy boundary.

A3—4 to 12 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine interstitial and tubular pores; 25 percent gravel; very strongly acid; clear wavy boundary.

A4—12 to 18 inches; brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine to medium roots; common very fine and fine interstitial and tubular pores; 25 percent gravel; moderately acid; clear wavy boundary.

Bw1—18 to 28 inches; dark yellowish brown (10YR 4/4) very gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; many very fine to medium roots; common very fine and fine interstitial and tubular pores; 35 percent gravel; moderately acid; clear wavy boundary.

Bw2—28 to 38 inches; yellowish brown (10YR 5/4) very gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine to coarse roots; common very fine and fine interstitial and tubular pores; 35 percent gravel and 10 percent cobbles; moderately acid; clear wavy boundary.

2Bw3—38 to 47 inches; yellowish brown (10YR 5/4) gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; massive, platy rock structure; soft, very

friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse; common very fine and fine interstitial and tubular pores; 15 percent gravel and 5 percent cobbles; 15 percent paragravel; moderately acid; clear wavy boundary.

2Cr—47 inches; weathered and fractured tuff-breccia.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.75 mile northeast of The Nipple peak; about 2,100 feet south and 450 feet west of the northeast corner of section 7, T. 9 N., R. 19 E.; USGS Carson Pass 7.5 minute topographic quadrangle; 38 degrees, 38 minutes, 51.9 seconds north latitude and 119 degrees, 55 minutes, 29.0 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Umbric epipedon thickness: 10 to 20 inches.

Depth to bedrock: 40 to 60 inches to a paralithic contact.

The paralithic materials below the contact are weathered andesitic tuff or tuff-breccia.

Sodium fluoride pH: 9.5 to 11.5.

Particle-size control section:

Clay content—Averages 12 to 18 percent.

Rock fragments—Averages 35 to 50 percent, dominantly gravel. Lithology of fragments are volcanic rocks such as tuff, tuff-breccia, and andesite.

A1 horizon:

Organic matter content—10 to 18 percent.

Reaction—Strongly acid or moderately acid.

Other features—Some pedons have A1 horizons with less than 10 percent organic matter and do not have the peaty texture modifier.

A2, A3, and A4 horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3 dry or moist.

Organic matter content—2 to 10 percent.

Reaction—Very strongly acid to moderately acid.

Other features—In some pedons base saturation is more than 50 percent by the ammonium acetate method and the A horizons constitute mollic epipedons instead of umbric.

Bw horizons:

Value—4, 5 or 6 dry, 3 or 4 moist.

Texture—Very gravelly sandy loam or very gravelly coarse sandy loam.

Clay content—12 to 20 percent.

Rock fragments—35 to 50 percent.

Pararock fragments—10 to 25 percent paragravel or parachanners in lower subhorizons.

Reaction—Strongly acid or moderately acid.

Forsell series

The Forsell series consists of very deep, well drained soils that formed in till derived mainly from granodiorite with minor amounts of metamorphic rocks. Forsell soils are on moraines superimposed on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 35 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, isotic Xeric Dystrocrypts

Typical pedon: Forsell very gravelly peaty coarse sandy loam, forestland, in a delineation of map unit 611. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 50 percent gravel, 15 percent cobbles, 10 percent stones, and 2 percent boulders.

A1—0 to 1 inch; dark grayish brown (10YR 4/2) very gravelly peaty coarse sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 40 percent gravel; strongly acid; clear smooth boundary.

A2—1 to 7 inches; dark grayish brown (10YR 4/2) very gravelly coarse sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine and medium roots; many very fine interstitial and common very fine tubular pores; 50 percent gravel and 5 percent cobbles; strongly acid; clear wavy boundary.

A3—7 to 11 inches; brown (10YR 5/3) extremely gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, medium, coarse and very coarse roots; common very fine tubular and interstitial pores; 50 percent gravel, 10 percent cobbles, and 5 percent stones; strongly acid; clear wavy boundary.

Bw1—11 to 27 inches; light yellowish brown (2.5Y 6/4) extremely stony sandy loam, olive brown (2.5Y 4/4)

moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, medium, coarse and very coarse roots; common very fine tubular and interstitial pores; 35 percent gravel, 10 percent cobbles, and 30 percent stones; strongly acid; clear wavy boundary.

Bw2—27 to 38 inches; light yellowish brown (2.5Y 6/4) extremely gravelly sandy loam, olive brown (2.5Y 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine, fine and medium roots; common very fine tubular and interstitial pores; 55 percent gravel and 15 percent cobbles; strongly acid; clear wavy boundary.

Bw3—38 to 60 inches; light yellowish brown (2.5Y 6/4) extremely gravelly sandy loam, olive brown (2.5Y 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine tubular and interstitial pores; 50 percent gravel and 10 percent cobbles; strongly acid.

Type location: Mono County, California; on the Toiyabe National Forest about 2 miles northeast of Upper Piute Meadows along the east side of Long Canyon; about 1,400 feet south and 200 feet west of the northeast corner of section 3, T. 4 N., R. 22 E.; USGS Tower Peak 7.5 minute topographic quadrangle; 38 degrees, 13 minutes, 31.9 seconds north latitude and 119 degrees, 31 minutes, 55.1 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from mid-July through September for 60 to 80 consecutive days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Umbric epipedon thickness: 10 to 16 inches.

Depth to base of cambic horizon: 40 to 60 inches.

Depth to bedrock: 60 to 80 inches to a lithic contact.

Sodium fluoride pH: 9.0 to 11.5.

Particle-size control section:

Clay content—Averages 8 to 15 percent.

Rock fragments—Averages 60 to 85 percent, with at least one horizon dominated by stones and cobbles. Lithology of fragments is dominantly granodiorite with some metamorphic rocks, such as quartzite and gneiss.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—10 to 15 percent in the A1 horizon and 2 to 8 percent in the A2 and A3 horizons.

Reaction—Strongly acid or moderately acid.

Bw horizons:

Hue—10YR or 2.5Y.

Value—6 or 7 dry, 4 or 5 moist.

Chroma—3 through 6, dry or moist.

Texture—Extremely gravelly sandy loam, extremely stony sandy loam, or extremely stony coarse sandy loam.

Clay content—8 to 15 percent.

Rock fragments—60 to 85 percent.

Reaction—Strongly acid or moderately acid.

Franktown series

The Franktown series consists of very shallow and shallow, well drained soils that formed in colluvium and residuum derived from metamorphic rocks that include gneiss, schist slate and metavolcanic rocks. Franktown soils are on mountains. Slopes are 50 to 75 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Lithic Ultic Haploxerolls

Typical pedon: Franktown extremely gravelly sandy loam, woodland, in a delineation of map unit 320. (Colors are for dry soil unless otherwise noted). The soil surface is covered with 55 percent gravel, 10 percent cobbles, and 10 percent stones.

Oi—0 to .5 inch; extremely gravelly slightly decomposed plant material, organic materials are mainly slightly decomposed pine needles, 55 percent gravel, 10 percent cobbles, and 10 percent stones; moderately acid; abrupt wavy boundary.

A1—.5 to 1 inch; grayish brown (10YR 5/2) extremely gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 5 percent stones, 5 percent cobbles, 60 percent pebbles; moderately acid; clear wavy boundary.

A2—1 to 5 inches; grayish brown (10YR 5/2) extremely gravelly fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky

structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; common very fine tubular and interstitial pores; 5 percent cobbles and 55 percent pebbles; moderately acid; clear wavy boundary.

A3—5 to 9 inches; grayish brown (10YR 5/2) very gravelly fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many very fine and common fine roots; common very fine tubular and interstitial pores; 5 percent cobbles and 45 percent pebbles; moderately acid; clear wavy boundary.

A4—9 to 16 inches; grayish brown (10YR 5/2) very gravelly fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common very fine through coarse roots; common very fine tubular and interstitial pores; 5 percent cobbles and 50 percent pebbles; slightly acid; abrupt irregular boundary.

R—16 inches; extremely hard gneiss bedrock.

Type location: Alpine County, California; within Fay Canyon; approximately 2,000 feet north and 1,500 feet west of southeast corner of Section 3, T.11 N, R. 20 E.; USGS Woodfords 7.5 minute topographic quadrangle; 38 degrees, 50 minutes, 36.1 seconds north latitude and 119 degrees, 49 minutes, 46.5 seconds west longitude; NAD 27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive days in the four months following the summer solstice; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 4 to 16 inches; includes the entire A horizon. Where a C horizon is present, includes the upper 7 inches of the soil when mixed.

Depth to bedrock: 4 to 20 inches to a lithic contact. The lithic materials below the contact are weathered metamorphic rocks such as gneiss, schist, shale or metavolcanics.

Particle-size control section:

Clay content—Averages 12 to 18 percent.

Rock fragments—Averages 50 to 80 percent, mainly gravel and cobbles. Lithology of rock fragments are metavolcanic rocks such as gneiss, schist, shale or metavolcanics.

A horizon:

Hue—10YR, 2.5Y or 5Y.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 or 3 percent.

Reaction—Moderately acid or slightly acid.

C horizon:

Hue—10YR, 2.5Y or 5Y.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—2 through 4 dry or moist.

Texture—Very gravelly sandy loam, extremely gravelly coarse sandy loam or very gravelly fine sandy loam.

Clay content—12 to 18 percent.

Rock fragment content—50 to 80 percent, dominantly gravel or cobbles.

Organic matter content—0.5 to 1 percent.

Reaction—Moderately acid or slightly acid.

Base saturation—Less than 60 percent.

Freelpeak series

The Freelpeak series consists of moderately deep, excessively drained soils that formed in colluvium over residuum derived from granodiorite. Freelpeak soils are on mountains. Slopes range from 15 to 75 percent. The mean annual precipitation is about 40 inches and the mean annual air temperature is about 35 degrees F.

Taxonomic class: Sandy-skeletal, mixed Typic Cryorthents

Typical pedon: Freelpeak gravel, rangeland, in the adjacent Tahoe Basin Area. (Colors are for dry soils unless otherwise noted). The soil surface is covered with 95 percent rock fragments consisting of 80 percent gravel and 15 percent cobbles.

C—0 to 2 inches; gravel; 50 percent fine gravel, 30 percent medium and coarse gravel, and 15 percent cobbles; abrupt smooth boundary.

2A—2 to 4 inches; brown (10YR 5/3) extremely gravelly coarse sand, dark yellowish brown (10YR 3/4) moist; single grain; loose, nonsticky and nonplastic; common fine and common very fine roots; many medium interstitial pores; 35 percent fine gravel, 35 percent medium and coarse gravel, 5 percent cobbles, and 5 percent stones; strongly acid; abrupt smooth boundary.

2Bw—4 to 8 inches; pale brown (10YR 6/3) very gravelly sand, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and common

very fine roots; many very fine interstitial pores; 15 percent fine gravel, 15 percent medium and coarse gravel, and 5 percent cobbles; strongly acid; clear smooth boundary.

2C—8 to 36 inches; very pale brown (10YR 7/3) very cobbly loamy fine sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few fine roots and few very fine roots; many very fine interstitial pores; 12 percent fine gravel, 8 percent medium and coarse gravel, 12 percent cobbles, and 8 percent stones; strongly acid; abrupt wavy boundary.

3Cr—36 to 46 inches; moderately cemented granodiorite bedrock.

Type location: El Dorado County, California; on Freel Peak; about 2,584 feet north and 146 feet east of the southwest corner of section 31, T.12 N., R.19 E.; USGS Freel Peak 7.5 minute topographic quadrangle; 38 degrees, 51 minutes, 35 seconds north latitude and 119 degrees, 53 minutes, 58 seconds west longitude, NAD83.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from mid-July to early October for 60 to 80 consecutive days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 35 to 40 degrees F.

Mean summer soil temperature: 44 to 47 degrees F.

Depth to bedrock: 20 to 40 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rock such as granodiorite.

Particle-size control section:

Clay content—Averages 0 to 6 percent.

Rock fragments—35 to 75 percent, with 35 to 65 percent gravel, 5 to 15 percent cobbles, and 5 to 15 percent stones.

C horizon:

Rock fragments—80 to 100 percent.

2A horizon:

Value—5 or 6 dry; 3 or 4 moist

Chroma—3 or 4 dry; 3 or 4 moist

Texture—Extremely gravelly coarse sand, very gravelly sand, or extremely gravelly loamy coarse sand

Clay content—0 to 6 percent

Rock fragments—35 to 80 percent.

Organic matter content—1 to 5 percent

Reaction—pH 5.1 to 6.0

2Bw horizon:

Value—4 through 6 dry; 3 or 4 moist

Chroma—3 or 4 dry; 3 or 4 moist

Texture—Very gravelly sand, very gravelly loamy coarse sand, or extremely gravelly coarse sand

Clay content—0 to 6 percent

Rock fragments—35 to 65 percent.

Organic matter—0.5 to 1 percent

Reaction—pH 5.1 to 6.0

2C horizon:

Texture—Very cobbly loamy fine sand, very gravelly sand, very gravelly coarse sand, or very cobbly loamy coarse sand

Clay content—0 to 6 percent

Rock fragments—35 to 60 percent.

Organic matter—0.25 to 1 percent

Reaction—pH 5.1 to 6.0

Gerdog series

The Gerdog series consists of very shallow and shallow, well drained soils that formed in colluvium and residuum derived from andesite, tuff, and tuff-breccia. Gerdog soils are on mountains. Slopes are 4 to 30 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Lithic Argixerolls

Typical pedon: Gerdog very gravelly sandy loam, rangeland, in a delineation of map unit 380. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 30 percent gravel, 5 percent cobbles, and 4 percent stones.

A—0 to 3 inches; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and common fine roots; common very fine interstitial and tubular pores; 40 percent gravel, 5 percent cobbles and 5 percent stones; slightly acid; clear wavy boundary.

Bt1—3 to 7 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine interstitial and tubular pores; few faint clay films

bridging sand grains; 40 percent gravel; slightly acid; clear wavy boundary.

Bt2—7 to 9 inches; brown (7.5YR 5/3) very gravelly loam, dark brown (7.5YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine interstitial and tubular pores; common faint clay films bridging sand grains; 40 percent gravel; slightly acid; clear wavy boundary.

Bt3—9 to 11 inches; brown (7.5YR 5/3) very gravelly sandy clay loam, dark brown (7.5YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine interstitial and tubular pores; common distinct clay films on faces of peds and lining pores; 40 percent gravel; 30 percent paragravel; slightly acid; clear irregular boundary.

R—11 to 16 inches; hard andesite; slightly weathered in the upper part.

Type location: Alpine County, California; on the Toiyabe National Forest about 1.5 miles south-southeast of the Leviathan Mine; about 1,600 feet south and 2,200 feet east of the northwest corner of section 26, T. 10 N, R. 21 E.; USGS Heenan Lake 7.5 minute topographic quadrangle; 38 degrees, 41 minutes, 14.3 seconds north latitude and 119 degrees, 38 minutes, 29.7 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 62 to 66 degrees.

Mollic epipedon thickness: 7 to 14 inches, includes the Bt horizons.

Depth to bedrock: 7 to 14 inches to a lithic contact.

Sodium fluoride pH: 8.5 to 9.0.

Particle-size control section:

Clay content—Averages 18 to 25 percent;

Rock fragments—Averages 35 to 60 percent, mainly gravel. Lithology of fragments are volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Rock fragments—35 to 60 percent.

Organic matter content—2 to 4 percent.
Reaction—Slightly acid or neutral.

Bt horizons:

Hue—10YR or 7.5YR.
Chroma—2 or 3, dry or moist.
Texture—Very gravelly sandy clay loam or very gravelly sandy loam.
Clay content—18 to 27 percent.
Rock fragments—35 to 50 percent.
Organic matter content—1 to 3 percent.
Reaction—Slightly acid or neutral.

Glenbrook

The Glenbrook series consists of shallow, somewhat excessively drained soils that formed in residuum from granodiorite. The Glenbrook soils are on mountains and hills. Slopes are 15 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 46 degrees.

Taxonomic class: Mixed, mesic, shallow Xeric
Torripsamments

Typical pedon: Glenbrook gravelly loamy coarse sand, rangeland, in a delineation of map unit 462. (Colors are for dry soil unless otherwise noted.)

A—0 to 5 inches; brown (10YR 5/3) gravelly loamy coarse sand, dark brown (10YR 3/3) moist; single grain; loose, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 25 percent fine gravel; neutral; clear wavy boundary.

C—5 to 14 inches; pale brown (10YR 6/3) gravelly loamy coarse sand, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial and few very fine tubular pores; 25 percent fine gravel; neutral; clear wavy boundary.

Cr—14 to 21 inches; weathered granodiorite.

Type location: Mono County, California; approximately one third of a mile east of Camp Antelope; about 2,400 feet south and 1,300 feet west of the northeast corner of section 22, T. 8N., R. 23 E.; USGS Risue Canyon 7.5 minute topographic quadrangle; 38 degree, 31 minutes, 31.0 seconds north latitude and 119 degrees, 26 minutes, 6.0 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist winter and spring, dry summer and autumn; Aridic moisture regime that borders on Xeric.

Soil temperature: 47 to 53 degrees.

Depth to paralithic contact: 10 to 20 inches.

Depth to hard bedrock: 24 to over 72 inches.

Control section:

Clay content—Less than 10 percent.

Texture—Loamy coarse sand, coarse sand, sand or loamy sand.

Rock fragments—10 to 25 percent, predominantly 2-5 millimeter diameter gravel.

Profile reaction—Slightly acid or neutral.

Other features—Base saturation is over 75 percent in all parts.

A horizon:

Hue—10YR or 7.5YR.

Value—4 through 6 dry, 2 through 4 moist.

Chroma—2 or 3.

C horizons:

Hue—10YR or 7.5YR.

Value—5 through 7 dry, 2 through 4 moist.

Chroma—2 or 3.

Grandridge series

The Grandridge series consists of shallow, well drained soils that formed in residuum and colluvium derived from granitic rock. Grandridge soils are on mountains. Slopes are 4 to 50 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 40 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid, shallow Typic Argixerolls

Typical pedon: Grandridge very gravelly coarse sandy loam, rangeland, in a delineation of map unit 660. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 80 percent gravel, 5 percent cobbles, and 2 percent stones.

A—0 to 1 inch; dark grayish brown (10YR 4/2) very gravelly coarse sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 40 percent gravel; neutral; clear wavy boundary.

Bt1—1 to 5 inches; brown (10YR 5/3) very gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine

and medium subangular blocky structure; soft, very friable, moderately sticky and moderately plastic; many very fine and fine roots; common very fine tubular and interstitial pores; few faint clay bridges between sand grains; 35 percent gravel; neutral; clear wavy boundary.

Bt2—5 to 10 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine tubular and interstitial pores; common faint clay bridges between sand grains and few distinct clay films on faces of peds and lining pores; 50 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.

Bt3—10 to 18 inches; brown (7.5YR 5/4) very gravelly sandy clay loam, dark brown (7.5YR 3/4) moist; moderate fine subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; few very fine and fine roots; common very fine tubular and interstitial pores; common distinct clay films on faces of peds and lining pores; 50 percent gravel and 5 percent cobbles; neutral; clear irregular boundary
Cr—18 inches; weathered granitic rock.

Type location: Mono County, California; on the Toiyabe National Forest in the Sweetwater Mountains about 2.7 miles northwest of Lobdell Lake; about 150 feet north and 1,750 feet west of the southeast corner of section 1, T. 7 N., R. 23 E.; USGS Chris Flat 7.5 minute topographic quadrangle; 38 degrees, 28 minutes, 22.0 seconds north latitude and 119 degrees, 23 minutes, 53.6 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive days in the four months following the summer solstice; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 59 to 68 degrees.

Mean winter soil temperature: 32 to 36 degrees.

Mollic epipedon thickness: 7 to 10 inches; includes the Bt1 and Bt2 horizons.

Depth to base of argillic horizon: 14 to 20 inches.

Depth to bedrock: 14 to 20 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rock.

Particle-size control section:

Clay content—Averages 18 to 25 percent.

Rock fragments—Averages 35 to 60 percent, mainly fine gravel (2 to 5 mm diameter). Lithology of fragments are granitic rocks such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt1 and Bt2 horizons:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly loam or very gravelly sandy clay loam.

Clay content—18 to 25 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt3 horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Very gravelly loam or very gravelly sandy clay loam.

Clay content—18 to 25 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Granhogany series

The Granhogany series consists of shallow, somewhat excessively drained soils that formed in residuum and colluvium derived from granitic rock. Granhogany soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Sandy-skeletal, mixed, frigid, shallow Entic Haploxerolls

Typical pedon: Granhogany very gravelly loamy coarse sand, rangeland, in a delineation of map unit 530. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 30 percent gravel and 10 percent cobbles.

A1—0 to 4 inches; dark grayish brown (10YR 4/2) very gravelly loamy coarse sand, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine

roots; many very fine interstitial pores; 45 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.

A2—4 to 11 inches; grayish brown (10YR 5/2) extremely gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, common fine, and common medium roots; common very fine tubular and interstitial pores; 50 percent gravel and 10 percent cobbles; slightly acid; clear wavy boundary.

A3—11 to 15 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, common fine, and common medium roots; common very fine tubular and interstitial pores; 45 percent gravel and 5 percent cobbles; slightly acid; clear irregular boundary.

Cr—15 to 21 inches; weathered granodiorite.

Type location: Mono County, California; on the Toiyabe National Forest about 4.5 miles southwest of the town of Walker; about 2,000 feet south and 350 feet east of the northwest corner of section 18, T. 7 N., R. 23 E.; USGS Lost Cannon Peak 7.5 minute topographic quadrangle; 38 degrees, 27 minutes, 12.9 seconds north latitude and 119 degrees, 30 minutes, 4.0 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 14 to 20 inches.

Depth to bedrock: 14 to 20 inches to a paralithic contact. The paralithic materials below the contact are weathered granitic rock.

Particle-size control section:

Clay content—Averages 3 to 8 percent.

Rock fragments—Averages 50 to 80 percent, mainly fine gravel (2 to 5 mm diameter). Lithology of fragments are granitic rocks such as granodiorite.

A1 horizon:

Value—4 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—3 to 6 percent.

Reaction—Slightly acid or neutral.

A2 and A3 horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly loamy coarse sand, very gravelly loamy coarse sand, or very gravelly coarse sandy loam.

Clay content—3 to 8 percent.

Rock fragments—50 to 80 percent.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Granidry series

The Granidry series consists of shallow, well drained soils that formed in residuum and colluvium derived from granitic rock. Granidry soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 18 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic, shallow Typic Argixerolls

Typical pedon: Granidry very gravelly coarse sandy loam, rangeland, in a delineation of map unit 532. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 45 percent gravel, 5 percent cobbles, 5 percent stones, and 5 percent boulders.

A—0 to 3 inches; brown (10YR 4/3) very gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 50 percent gravel; neutral; clear wavy boundary.

Bt1—3 to 7 inches; brown (10YR 4/3) very gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular and interstitial pores; few faint clay bridges between sand grains; 50 percent gravel; neutral; clear wavy boundary.

Bt2—7 to 11 inches; brown (10YR 4/3) extremely gravelly coarse sandy loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular and interstitial pores; common faint clay bridges between sand grains and common distinct clay films on faces of peds and lining pores; 60 percent gravel; neutral; clear wavy boundary.

Bt3—11 to 16 inches; brown (10YR 5/3) extremely gravelly sandy clay loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; hard, friable, moderately sticky and slightly plastic; few fine and medium and common very fine roots; common very fine interstitial and few very fine tubular pores; many distinct clay films on faces of peds, lining pores, and coating gravel; 75 percent gravel; neutral; clear irregular boundary.

Crt—16 inches; weathered and fractured granodiorite; illuvial clay is in fractures.

Type location: Mono County, California; on the Toiyabe National Forest about 2,000 feet east northeast of the Buckeye Creek Campground; about 300 feet south and 700 feet east of the northwest corner of section 4, T. 4 N., R. 24 E.; USGS Twin Lakes 7.5 minute topographic quadrangle; 38 degrees, 14 minutes, 29.4 seconds north latitude and 119 degrees, 20 minutes, 19.3 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during fall, winter, and spring; dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 47 to 50 degrees.

Mollic epipedon thickness: 7 to 14 inches; includes the Bt1 and Bt2 horizons.

Depth to bedrock: 14 to 20 inches to a paralithic contact. The paralithic materials below the contact are weathered granitic rock.

Particle-size control section:

Clay content—Averages 12 to 18 percent.

Rock fragments—Averages 60 to 80 percent, mainly fine gravel (2 to 5 mm diameter). Lithology of fragments are; granitic rocks such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt1 and Bt2 horizons:

Hue—10YR or 7.5YR. Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly coarse sandy loam or extremely gravelly coarse sandy loam.

Clay content—10 to 18 percent.

Rock fragments—50 to 80 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt3 horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Extremely gravelly sandy clay loam or extremely gravelly coarse sandy loam.

Clay content—15 to 25 percent.

Rock fragments—65 to 80 percent.

Reaction—Slightly acid or neutral.

Granylith series

The Granylith series consists of shallow, moderately well drained soils that formed in till derived from mixed rocks and slope colluvium derived from granitic rocks.

Granylith soils are on mountains. Slopes are 8 to 30 percent. The mean annual precipitation is about 45 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Sandy-skeletal, mixed Lithic Cryorthents

Typical pedon: Granylith very gravelly loamy coarse sand, forestland, in a delineation of map unit 240. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 2 percent stones, and 3 percent boulders.

A1—0 to 1 inch; dark grayish brown (10YR 4/2) very gravelly loamy coarse sand, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine and fine interstitial pores; 40 percent gravel; slightly acid; clear smooth boundary.

A2—1 to 4 inches; brown (10YR 5/3) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; 45 percent gravel; slightly acid; clear smooth boundary.

Bw1—4 to 12 inches; yellowish brown (10YR 5/6) very gravelly loamy coarse sand, dark yellowish brown (10YR 3/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, common fine, common medium, and common coarse roots; 40 percent gravel; slightly acid; clear wavy boundary.

Bw2—12 to 15 inches; yellowish brown (10YR 5/8) very gravelly coarse sandy loam, dark yellowish brown (10YR 3/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, common fine, common medium, and common coarse roots; 35 percent gravel; common medium distinct yellowish red (5YR 4/6) moist masses of iron accumulation in the matrix; slightly acid; abrupt smooth boundary.
R—15 inches; hard unfractured granitic rock.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.2 mile east of Border Ruffian Flat; about 1,800 feet north and 800 feet west of the southeast corner of section 17, T. 9 N., R. 19 E.; USGS Carson Pass 7.5 minute topographic quadrangle; 38 degrees, 37 minutes, 46.8 seconds north latitude and 119 degrees, 54 minutes, 27.9 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; saturated within a 3 to 6 inch thick zone directly overlying bedrock for greater than 20 consecutive days during the spring or early summer; Xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Ochric epipedon thickness: 3 to 6 inches.

Depth to bedrock: 10 to 20 inches to a lithic contact.

Particle-size control section:

Clay content—Averages less than 10 percent.

Sand content—Averages 75 to 85 percent much of which is medium and coarser sand; Rock fragments—Averages 35 to 50 percent, dominantly gravel. Lithology of fragments are mainly granitic rocks such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3 dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Moderately acid or slightly acid.

Bw1 horizon:

Hue—10YR or 7.5YR.

Value—3 or 4 moist.

Chroma—4 through 8 dry, 4 through 6 moist.

Clay content—3 to 10 percent.

Rock fragments—35 to 60 percent.

Reaction—Moderately acid or slightly acid.

Bw2 horizon:

Hue—10YR or 7.5YR.

Value—3 or 4 moist.

Chroma—4 through 8 dry, 4 through 6 moist.

Texture—Very gravelly loamy coarse sand or very gravelly coarse sandy loam.

Clay content—3 to 10 percent.

Rock fragments—35 to 60 percent.

Reaction—Moderately acid or slightly acid.

Redoximorphic features—Redox concentrations occur as masses of iron accumulation.

Halfash series

The Halfash series consists of shallow, well drained soils that formed in residuum and colluvium derived from andesite with surficial additions of eolian volcanic ash. Halfash soils are on mountains. Slopes are 8 to 30 percent. The mean annual precipitation is about 13 inches and the mean annual temperature is about 44 degrees.

Taxonomic class: Ashy-skeletal, glassy, frigid, shallow Vitritorrandic Argixerolls

Typical pedon: Halfash very gravelly ashy sandy loam, rangeland, in a delineation of map unit 871. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 30 percent gravel, 15 percent cobbles, and 5 percent stones.

A—0 to 3 inches; grayish brown (10YR 5/2) very gravelly ashy sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial and common fine tubular pores; 30 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.

Bt1—3 to 8 inches; brown (10YR 5/3) very gravelly ashy loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine and few medium roots; common very fine tubular and interstitial pores; common faint clay bridges between sand grains and few distinct clay films on faces of peds and lining pores; 30 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.

Bt2—8 to 17 inches; brown (10YR 5/3) very gravelly ashy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine, fine and

medium roots; common very fine tubular and interstitial pores; common distinct clay films on faces of peds and lining pores; 45 percent gravel and 10 percent cobbles; neutral; clear irregular boundary. Cr—17 to 20 inches; weathered andesite

Type location: Mono County, California; on the Toiyabe National Forest about 4.5 miles southeast of the Masonic Town site; about 2,400 feet south and 2,150 feet east of the northwest corner of section 32, T. 6 N., R. 26 E.; USGS Dome Hill 7.5 minute topographic quadrangle; 38 degrees, 19 minutes, 33.6 seconds north latitude and 119 degrees, 02 minutes, 06.7 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in winter and spring, dry from July through October; Aridic moisture regime that borders on xeric.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 10 to 17 inches; includes the Bt1 horizon and also includes the Bt2 horizon in some pedons.

Depth to bedrock: 14 to 20 inches to a paralithic contact. The paralithic materials below the contact are weathered volcanic rock such as andesite.

Volcanic glass content: 35 to 60 percent in the coarse silt through fine sand fractions.

Particle-size control section:

Clay content—Averages 20 to 30 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel. Lithology of fragments is andesite.

A horizon:

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Hue—10YR or 7.5YR.

Clay content—20 to 27 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 to 3 percent.

Bt2 horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Very gravelly ashy loam or very gravelly ashy clay loam.

Clay content—25 to 35 percent.

Rock fragments—35 to 60 percent.

Organic matter content—0.5 to 2 percent.

Hardnut series

The Hardnut series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks with surficial additions of eolian volcanic ash. Hardnut soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 44 degrees.

Taxonomic class: Ashy-skeletal, glassy, frigid Lithic Argixerolls

Typical pedon: Hardnut very gravelly ashy sandy loam, forestland, in a delineation of map unit 860. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 50 percent gravel, 20 percent cobbles, and 5 percent stones.

A—0 to 3 inches; grayish brown (10YR 5/2) very gravelly ashy sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 50 percent gravel and 5 percent cobbles; neutral; clear smooth boundary.

Bt1—3 to 8 inches; grayish brown (10YR 5/2) extremely gravelly ashy sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and slightly plastic; many very fine, many fine, and many medium roots; common very fine tubular and interstitial pores; common faint clay bridges coating sand grains; 65 percent gravel; neutral; clear wavy boundary.

Bt2—8 to 15 inches; brown (10YR 5/3) extremely gravelly ashy clay loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common very fine, common fine, common medium, and common coarse roots; common very fine tubular and interstitial pores; common distinct clay films on faces of peds and lining pores; 75 percent gravel; neutral; abrupt irregular boundary.

R—15 inches; hard fractured andesite.

Type location: Mono County, California; on the Toiyabe National Forest about 1.2 miles east of Murphy Pond; about 1,700 feet south and 1,000 feet west of the

northeast corner of section 13, T. 6 N., R. 25 E.; Bridgeport USGS 7.5 minute topographic quadrangle; 38 degrees, 22 minutes, 12.1 seconds north latitude and 119 degrees, 10 minutes, 31.2 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in winter and spring, dry from July through October; Aridic moisture regime that borders on xeric.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 10 to 16 inches; includes the Bt1 horizon and also includes the Bt2 horizon in some pedons.

Depth to bedrock: 14 to 20 inches to a lithic contact.

Volcanic glass content: 35 to 60 percent in the coarse silt through fine sand fractions.

Particle-size control section:

Clay content—Averages 20 to 30 percent.

Rock fragments—Averages 60 to 80 percent, mainly gravel. Lithology of fragments is andesite or tuff.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly sandy clay loam or extremely gravelly loam.

Clay content—18 to 25 percent.

Rock fragments—60 to 80 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt2 horizon:

Hue—10YR or 7.5YR.

Value—4, 5 or 6 dry, 3 or 4 moist.

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly sandy clay loam or extremely gravelly clay loam.

Clay content—25 to 35 percent.

Rock fragments—60 to 80 percent.

Organic matter content—0.5 to 2 percent.

Reaction—Slightly acid or neutral.

Hardtil series

The Hardtil series consists of shallow, moderately well drained soils that formed in till derived from mixed rocks and colluvium derived mainly from granitic rocks. Hardtil soils are on mountains. Slopes are 8 to 75 percent. The mean annual precipitation is about 35 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Humic Lithic Dystrochrepts

Typical pedon: Hardtil gravelly loamy coarse sand, forestland, in a delineation of map unit 220. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 35 percent gravel, 5 percent cobbles, 5 percent stones, and 5 percent boulders.

A1—0 to 3 inches; grayish brown (10YR 5/2) gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; common very fine interstitial and tubular pores; 25 percent gravel and 5 percent stones; slightly acid; clear wavy boundary.

A2—3 to 7 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; common very fine interstitial and tubular pores; 45 percent gravel and 10 percent cobbles; slightly acid; clear wavy boundary.

Bw—7 to 18 inches; light yellowish brown (10YR 6/4) very gravelly coarse sandy loam, dark yellowish brown (10YR 3/4) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine, and common medium roots; common very fine interstitial and tubular pores; few medium distinct brown (7.5YR 4/4) moist masses of iron accumulation; 55 percent gravel; moderately acid; abrupt wavy boundary.

R—18 inches; hard granitic rock.

Type location: Alpine County, California; on the Toiyabe National Forest about 2,100 feet south of Hope Valley Campground; about 1,600 feet north and 800 feet west of the southeast corner of section 7, T. 10 N., R. 19 E.; USGS Carson Pass 7.5 minute topographic quadrangle; 38 degrees, 43 minutes, 30.1 seconds north latitude and 119 degrees, 55 minutes, 33.8 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; saturated within a 3 to 6 inch thick layer directly overlying bedrock for greater than 20 consecutive days during the spring or early summer; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 59 to 62 degrees.

Umbric epipedon thickness: 7 to 12 inches.

Depth to bedrock: 10 to 20 inches to a lithic contact.

Particle-size control section:

Clay content—Averages 8 to 15 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel. Lithology of fragments are mainly granitic rocks such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Moderately acid or slightly acid.

Bw horizon:

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Clay content—8 to 15 percent.

Rock fragments—35 to 60 percent.

Reaction—Moderately acid or slightly acid.

Redoximorphic features—Redox concentrations occur as masses of iron accumulation.

Other features—Some pedons lack cambic horizons when the Bw horizon is less than 6 inches thick.

Hargran series

The Hargran series consists of moderately deep, moderately well drained soils that formed in till derived from mixed rocks and colluvium derived from granitic rock. Hargran soils are on mountains. Slopes are 8 to 30 percent. The mean annual precipitation is about 45 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Oxyaquic Dystrocrypts

Typical pedon: Hargran stony coarse sandy loam, forestland, in a delineation of map unit 240. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 10 percent gravel, 10

percent cobbles, 1 percent stones, and 10 percent boulders.

Oe—0 to 1 inch; dark grayish brown (10YR 4/2) stony moderately decomposed plant material, very dark brown (10YR 2/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and few fine roots; common very fine interstitial and tubular pores; fiber content is about 70 percent before rubbing and about 50 percent after rubbing; 10 percent gravel and 10 percent stones; very strongly acid; clear wavy boundary.

A1—1 to 9 inches; grayish brown (10YR 5/2) stony coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine, many fine, many medium, and many coarse roots; common very fine interstitial and tubular pores; 10 percent gravel and 10 percent stones; very strongly acid; clear wavy boundary.

A2—9 to 24 inches; yellowish brown (10YR 5/4) stony sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine, few fine, many medium, and many coarse roots; common very fine interstitial and tubular pores; 15 percent gravel, 5 percent cobbles, and 10 percent stones; very strongly acid; clear wavy boundary.

Bw1—24 to 36 inches; brown (7.5YR 5/4) very stony sandy loam, dark brown (7.5YR 3/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine to coarse roots; common very fine interstitial and tubular pores; 25 percent gravel, 5 percent cobbles, and 10 percent stones; strongly acid; clear irregular boundary.

Bw2—36 to 39 inches; yellowish brown (10YR 5/4) very stony sandy loam, dark yellowish brown (10YR 3/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine to coarse roots; common very fine interstitial and tubular pores; 25 percent gravel, 5 percent cobbles, and 10 percent stones; common medium distinct yellowish red (5YR 4/6) moist masses of iron accumulation in the matrix; strongly acid; abrupt irregular boundary.

R—39 inches; hard granitic bedrock.

Type location: Alpine County, California; on the Eldorado National Forest about 0.75 mile northeast of Lower Blue Lake; about 2,460 feet south and 400 feet east of the northwest corner of section 20, T. 9 N., R. 19 E.; USGS Pacific Valley 7.5 minute

topographic quadrangle; 38 degrees, 37 minutes, 10.7 seconds north latitude and 119 degrees, 55 minutes, 2.2 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; saturated within a 3 to 10 inch thick zone directly overlying bedrock (within depths of 24 to 40 inches) for greater than 20 consecutive days during the spring or early summer; Xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Umbric epipedon thickness: 16 to 24 inches, includes the Oe, A1, and A2 horizons.

Depth to bedrock: 20 to 40 inches to a lithic contact measured from the boundary between the Oe and A1 horizons.

Particle-size control section:

Clay content—Averages 10 to 18 percent.

Rock fragments—Averages 35 to 50 percent, mainly stones. Lithology of fragments are; granitic rock such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 through 4 dry, 2 or 3 moist.

Organic matter content—3 to 5 percent.

Reaction—Very strongly acid or strongly acid.

Bw horizons:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—4 through 8 dry, 4 through 6 moist.

Texture—Very stony sandy loam or very gravelly coarse sandy loam.

Clay content—10 to 18 percent.

Rock fragments—35 to 50 percent.

Reaction—Very strongly acid or strongly acid.

Redoximorphic features—Redox concentrations occur as masses of iron accumulation within the matrix in the Bw2 horizon.

Hawkinspeak series

The Hawkinspeak series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from tuff, tuff-breccia, and andesite.

Hawkinspeak soils are on mountains. Slopes are 8 to 75 percent. The mean annual precipitation is about 30

inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, Pachic Argicryolls

Typical pedon: Hawkinspeak very gravelly sandy loam, rangeland, in a delineation of map unit 260. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 45 percent gravel, 5 percent cobbles, 3 percent stones, and 1 percent boulders.

A1—0 to 3 inches; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine roots; common very fine interstitial and tubular pores; 30 percent gravel, 5 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

A2—3 to 9 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and common fine roots; common very fine interstitial and common very fine tubular pores; 45 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.

Bt1—9 to 15 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and slightly plastic; common very fine, common fine, and common medium roots; common very fine interstitial and tubular pores; few faint clay bridges on sand grains; 45 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.

Bt2—15 to 33 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and slightly plastic; common very fine, common fine, and common medium roots; common very fine interstitial and common tubular pores; common faint clay bridges on sand grains; 50 percent gravel and 5 percent cobbles; slightly acid; abrupt irregular boundary.

R—33 inches; fractured, hard tuff.

Type location: Alpine County, California; on the Toiyabe National Forest southwest of Hawkins Peak; about 675 feet north and 2,450 feet west of the southeast corner of section 3, T. 10 N., R. 19 E.; USGS Carson Pass 7.5 minute topographic

quadrangle; 38 degrees, 44 minutes, 3.8 seconds north latitude and 119 degrees, 52 minutes, 31.5 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 50 to 54 degrees.

Mollic epipedon thickness: 20 to 40 inches, includes the Bt1 horizon or both the Bt1 and Bt2 horizon in some pedons.

Depth to bedrock: 20 to 40 inches to a lithic contact.

Sodium fluoride pH: 8.5 to 10.0.

Particle-size control section:

Clay content—Averages 18 to 27 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel. Lithology of fragments are; volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 5 percent.

Reaction—Slightly acid or neutral.

Bt horizons:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Very gravelly sandy clay loam, very gravelly loam, or very gravelly sandy loam.

Clay content—18 to 27 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Hawkridge series

The Hawkridge series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from tuff, tuff-breccia, and andesite. Hawkridge soils are on mountains. Slopes are 8 to 30 percent. The mean annual precipitation is about 30 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid, Lithic Argixerolls

Typical pedon: Hawkridge extremely gravelly coarse sandy loam, rangeland, in a delineation of map unit

260. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 50 percent gravel, 5 percent cobbles, and 3 percent stones.

A1—0 to 1 inch; grayish brown (10YR 5/2) extremely gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 70 percent gravel and 5 percent cobbles; slightly acid; abrupt wavy boundary.

A2—1 to 7 inches; brown (10YR 5/3) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; common very fine interstitial and tubular pores; 45 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.

Bt—7 to 14 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine interstitial and tubular pores; common faint clay bridges on sand grains; 45 percent gravel and 5 percent cobbles; slightly acid; abrupt wavy boundary.

R—14 inches; hard tuff-breccia.

Type location: Alpine County, California; on the

Toiyabe National Forest about 1 mile southeast of Hawkins Peak; about 1,825 feet north and 1,175 feet east of the southwest corner of section 11, T. 10 N., R. 19 E.; USGS Markleeville 7.5 minute topographic quadrangle; 38 degrees, 43 minutes, 30.1 seconds north latitude and 119 degrees, 51 minutes, 49.9 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 54 to 59 degrees.

Mollic epipedon thickness: 7 to 14 inches, includes the Bt horizon.

Depth to bedrock: 7 to 14 inches to a lithic contact.

Sodium fluoride pH: 8.5 to 10.0.

Particle-size control section:

Clay content—Averages 14 to 20 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel. Lithology of fragments are volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt horizon:

Hue—10YR or 7.5YR.

Chroma—3 or 4 dry, 3 moist.

Texture—Very gravelly sandy clay loam, extremely gravelly coarse sandy loam, or very gravelly loam.

Clay content—18 to 27 percent.

Rock fragments—50 to 80 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Haybourne series

The Haybourne series consists of very deep, well drained soils that formed in alluvium derived from granitic rocks. Haybourne soils are on inset fans and fan aprons. Slopes are 0 to 4 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 50 degrees.

Taxonomic class: Coarse-loamy, mixed, superactive, mesic Xeric Haplocambids

Typical pedon: Haybourne loam, rangeland, in adjacent Douglas County. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 15 percent gravel.

A1—0 to 3 inches; pale brown (10YR 6/3) loam, dark brown (10YR 3/3) moist; moderate medium and coarse platy structure; soft, friable, slightly sticky and nonplastic; few very fine roots; many fine and many medium vesicular pores; neutral (pH 6.6); abrupt smooth boundary.

A2—3 to 6 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak medium platy structure; soft, friable, slightly sticky and nonplastic; common very fine and common fine roots; many very fine and many fine vesicular pores; neutral (pH 6.7); abrupt smooth boundary.

Bw1—6 to 15 inches; brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common fine and common very fine roots; few fine tubular, and many very fine and fine interstitial pores; neutral (pH 6.7); clear smooth boundary.

Bw2—15 to 25 inches; brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; hard, friable, slightly sticky and nonplastic; common very fine and common fine roots; many fine and very fine interstitial pores; common faint clay bridges between sand grains; neutral (pH 6.7); clear smooth boundary.

C1—25 to 34 inches; brown (10YR 5/3) loamy sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; many very fine and many fine interstitial pores; neutral (pH 7.0); clear smooth boundary.

C2—34 to 42 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and many fine interstitial pores; neutral (pH 7.0); clear smooth boundary.

C3—42 to 62 inches; light brownish gray (10YR 6/2) coarse sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; many fine and very fine interstitial pores; few spots of slight effervescence; neutral (pH 7.2)

Type location: Douglas County, Nevada; in Carson Valley about 2 miles southwest of Hot Springs Mountain; about 600 feet west of the northeast corner of section 33, T.14 N., R.20 E.; USGS McTarnahan Hill 7.5 minute topographic quadrangle; 39 degrees, 02 minutes, 28 seconds north latitude and 119 degrees, 44 minutes, 03 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually dry in the moisture control section, moist in winter and spring, dry in summer and fall; aridic moisture regime that borders on xeric.

Mean annual soil temperature: 48 to 53 degrees.

Depth to base of cambic horizon: 18 to 32 inches.

Control section:

Clay content—Averages 10 to 18 percent.

Rock fragments—0 to 20 percent, mainly fine pebbles. Lithology of fragments is mainly granitic rocks such as granite or granodiorite.

A horizons:

Value—5 or 6 dry, 3 or 4 moist.

Chroma—2 or 3, dry or moist.

Structure—Granular, subangular blocky, or platy.

Reaction—Neutral or slightly alkaline.

Bw horizons:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Sandy loam, gravelly sandy loam, or fine sandy loam.

Clay content—8 to 18 percent.

Rock fragments—0 to 20 percent, mainly fine pebbles.

Reaction—Neutral to moderately alkaline.

Salinity (EC)—0 to 2 mmhos/cm.

C horizons:

Value—5 through 7 dry, 3 through 5 moist.

Chroma—2 through 4, dry or moist.

Texture—Stratified gravelly coarse sand to fine sandy loam.

Clay content—5 to 12 percent.

Rock fragments—0 to 15 percent, mainly fine pebbles.

Reaction—Neutral to moderately alkaline.

Salinity (EC)—0 to 2 mmhos/cm.

Other features—Some pedons are slightly effervescent below a depth of 30 inches, where influenced by calcareous parent material; some pedons have stratified very gravelly fine sand and cobbly sand subhorizons below a depth of 40 inches.

Heenlake series

The Heenlake series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from tuff, tuff-breccia, and andesite. Heenlake soils are on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Typic Argixerolls

Typical pedon: Heenlake very stony loam, rangeland, in a delineation of map unit 390. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 20 percent gravel, 10 percent cobbles, and 8 percent stones.

A—0 to 6 inches; grayish brown (10YR 5/2) very stony loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular and interstitial pores; 25 percent gravel, 10 percent

cobbles, and 10 percent stones; slightly acid; clear wavy boundary.

Bt1—6 to 13 inches; dark grayish brown (10YR 4/2) very gravelly clay loam, very dark brown (10YR 2/2) moist; moderate fine and medium subangular blocky structure; common very fine through medium roots; common very fine tubular and interstitial pores; many distinct clay films on faces of pedis and lining pores; 40 percent gravel, 10 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

Bt2—13 to 18 inches; dark grayish brown (10YR 4/2) very gravelly clay loam, very dark brown (10YR 2/2) moist; moderate fine and medium subangular blocky structure; common very fine through coarse roots; common very fine tubular and interstitial pores; many distinct clay films on faces of pedis and lining pores; 40 percent gravel and 5 percent cobbles; 5 percent paragravel and 5 percent paracobbles; neutral; clear wavy boundary.

Bt3—18 to 22 inches; 70 percent brown (7.5YR 5/4) and 30 percent grayish brown (10YR 5/2) very gravelly clay loam, 70 percent dark brown (7.5YR 3/4) and 30 percent very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; common very fine through coarse roots; common very fine tubular and interstitial pores; many distinct clay films on faces of pedis and lining pores; 40 percent gravel; 10 percent paragravel; neutral; clear irregular boundary.

Cr—22 to 32 inches; weathered andesitic tuff.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.4 mile south of Heenan Lake; about 1,650 feet north and 1,500 feet west of the southeast corner of section 10, T. 9 N., R. 21 E.; USGS Heenan Lake 7.5 minute topographic quadrangle; 38 degrees, 38 minutes, 16.2 seconds north latitude and 119 degrees, 39 minutes, 16.6 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 10 to 20 inches; includes the Bt1 and Bt2 horizons.

Depth to bedrock: 20 to 40 inches to a paralithic contact.

The paralithic materials below the contact are weathered volcanic rocks such as andesitic tuff.

Sodium fluoride pH: 8.5 to 9.0.

Particle-size control section:

Clay content—Averages 25 to 35 percent.

Rock fragments—Averages 35 to 60 percent, mainly pebbles. Lithology of fragments are volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt1 and Bt2 horizons:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly clay loam, very gravelly loam or very gravelly sandy clay loam.

Clay content—25 to 30 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt3 horizon:

Hue—10YR or 7.5YR.

Value—3 through 5 moist.

Texture—Very gravelly clay loam or very gravelly sandy clay loam.

Clay content—27 to 35 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Holbrook series

The Holbrook series consists of very deep, well drained soils that formed in alluvium derived from mixed sources. Holbrook soils are on alluvial fans and inset fans. Slopes are 2 to 8 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 49 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Torriorthentic Haploxerolls

Typical pedon: Holbrook very stony fine sandy loam, rangeland, in adjacent Douglas County. (Colors are for dry soil unless otherwise noted.)

A—0 to 10 inches; grayish brown (10YR 5/2) very stony sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine interstitial pores; 20 percent

gravel, 5 percent cobbles, 10 percent stones; neutral; clear wavy boundary.

C1—10 to 15 inches; light brownish gray (10YR 6/2) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few coarse, medium and fine roots and common very fine roots; few fine and very fine tubular pores and many very fine interstitial pores; 30 percent gravel, 10 percent cobbles; neutral; gradual wavy boundary.

C2—15 to 31 inches; light brownish gray (10YR 6/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few medium and fine and common very fine roots; few very fine and fine tubular and many very fine interstitial pores; 30 percent gravel, 10 percent cobbles; neutral; gradual wavy boundary.

C3—31 to 43 inches; light brownish gray (2.5Y 6/2) very gravelly sandy loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine and common very fine roots; many very fine and fine interstitial pores; 40 percent gravel, 10 percent cobbles; neutral; gradual wavy boundary.

Ck—43 to 60 inches; light brownish gray (2.5Y 6/2) very gravelly loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine and very fine roots; many very fine and fine interstitial pores; strongly effervescent; 40 percent gravel, 15 percent cobbles; moderately alkaline.

Type location: Lyon County, Nevada; in Smith Valley, just below the mouth of Red Canyon; about 1,350 feet south and 1,000 feet east of the northwest corner of section 4, T. 11 N., R. 23 E.; USGS Oreana Peak 7.5 minute topographic quadrangle; 38 degrees, 50 minutes, 59.0 seconds north latitude and 119 degrees, 25 minutes, 02.0 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually dry in the moisture control section, moist in winter and spring, dry in summer and fall; aridic moisture regime that borders on xeric.

Mean annual soil temperature: 48 to 53 degrees.

Mollic epipedon thickness: 8 to 15 inches.

Control section:

Clay content—Averages 10 to 15 percent.

Rock fragments—Averages 35 to 60 percent.

A horizons:

Hue—10YR or 2.5Y.

Value—4 or 5 dry; some pedons have thin subhorizons formed in eolian materials with dry value of 6 or 7.

Chroma—1 through 3, dry or moist.

Reaction—Slightly acid or neutral.

Organic matter content—1 to 3 percent.

C horizon:

Value—5 or 6 dry, 3 through 5 moist.

Chroma—2 or 3, dry or moist.

Texture—Stratified stony sand to extremely gravelly loam, averaging very gravelly sandy loam.

Rock fragments—Averages 35 to 60 percent.

Structure—Massive, may be weak subangular blocky in some pedons.

Consistence—Soft or slightly hard dry, nonsticky or slightly sticky and nonplastic or slightly plastic wet.

Reaction—Slightly acid to moderately alkaline.

Effervescence—Some pedons may have subhorizons below 40 inches which are slightly effervescent or strongly effervescent.

Calcium carbonate equivalent—0 to 5 percent.

Holdon series

The Holdon series consists of deep, well drained soils that formed in colluvium and residuum derived from volcanic and metavolcanic rocks. Holdon soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 24 inches and the mean annual temperature is about 36 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Xeric Eutrocrypts

Typical pedon: Holdon extremely gravelly loamy coarse sand, rangeland, in a delineation of map unit 513. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 65 percent gravel, 25 percent cobbles, and 3 percent stones.

A—0 to 3 inches; pale brown (10YR 6/3) extremely gravelly loamy coarse sand, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial pores; 55 percent gravel and 10 percent cobbles; neutral; abrupt wavy boundary.

Bw1—3 to 12 inches; pale brown (10YR 6/3) extremely gravelly coarse sandy loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky

structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, medium and coarse and few very coarse roots; common very fine tubular and interstitial and few very fine and fine vesicular pores; 55 percent gravel and 25 percent cobbles; neutral; clear wavy boundary.

Bw2—12 to 23 inches; very pale brown (10YR 7/4) extremely gravelly sandy loam, yellowish brown (10YR 5/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine, fine, medium, coarse, and very coarse roots; many very fine and fine interstitial pores; 55 percent gravel and 25 percent cobbles; neutral; abrupt irregular boundary.

2C—23 to 47 inches; cobbles; few fine and medium roots; many very coarse interstitial pores between fragments; 15 percent gravel and 75 percent cobbles; silt coats on upper surfaces of some fragments; clear wavy boundary.

2R—47 inches; hard, fractured tuff.

Type location: Mono County, California; on the Toiyabe National Forest in the Sweetwater Mountains near the head of Silverado Canyon; about 700 feet north and 3,160 feet east of the southwest corner of section 19, T. 7 N., R. 25 E.; USGS Mount Patterson 7.5 minute topographic quadrangle; 38 degrees, 26 minutes, 44.3 seconds north latitude and 119 degrees, 16 minutes, 17.6 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from mid-July through September for 60 to 80 consecutive days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 47 to 54 degrees.

Depth to base of cambic horizon: 20 to 40 inches.

Depth to fragmental material: 20 to 40 inches.

Depth to bedrock: 40 to 60 inches to a lithic contact.

Particle-size control section:

Clay content—Averages 8 to 15 percent.

Rock fragments—Averages 60 to 85 percent in the upper part, and more than 90 percent in the lower part, mainly gravel and cobbles. Lithology of fragments are volcanic rocks such as andesite, tuff, and tuff-breccia and some metavolcanic rock.

A horizon:

Hue—7.5YR through 2.5Y.

Value—6 or 7 dry, 4 or 5 moist.
 Chroma—2 or 3, dry or moist.
 Reaction—Slightly acid or neutral.

Bw horizons:

Hue—7.5YR through 2.5Y.
 Value—6 or 7 dry, 4 or 5 moist.
 Chroma—3 or 4, dry or moist.
 Texture—Extremely gravelly coarse sandy loam or extremely gravelly sandy loam.
 Clay content—8 to 15 percent.
 Rock fragments—60 to 85 percent.
 Reaction—Slightly acid or neutral.

2C horizon:

Hue—7.5YR through 2.5Y.
 Value—6 or 7 dry, 4 or 5 moist.
 Chroma—3 or 4, dry or moist.
 Rock fragments—90 to 95 percent.

Hopeval series

The Hopeval series consists of very deep, poorly and very poorly drained soils that formed in alluvium and outwash derived from mixed rocks. Hopeval soils are on flood plains and stream terraces. Slopes are 0 to 8 percent. The mean annual precipitation is about 35 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Coarse-loamy, mixed, superactive
 Cumulic Cryaquolls

Typical pedon: Hopeval very fine sandy loam, rangeland, in a delineation of map unit 190. (Colors are for moist soil unless otherwise noted.)

- A1—0 to 2 inches; very dark brown (10YR 2/2) very fine sandy loam, dark grayish brown (10YR 4/2) dry; strong fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; common very fine interstitial and tubular pores; slightly acid; clear wavy boundary.
- A2—2 to 12 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots and few fine; common very fine interstitial and tubular pores; slightly acid; clear wavy boundary.
- A3—12 to 15 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; common fine distinct dark yellowish brown (10YR 3/4) irregular soft iron masses throughout; moderate fine and

medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine roots and few fine; common very fine interstitial and tubular pores; slightly acid; clear wavy boundary.

- A4—15 to 26 inches; very dark grayish brown (10YR 3/2) stratified fine sand to sandy loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots and few fine; common very fine interstitial and tubular pores; many fine distinct dark yellowish brown (10YR 3/4) irregular masses of iron accumulation in the matrix; slightly acid; clear wavy boundary.

- C1—26 to 33 inches; dark grayish brown (10YR 4/2) stratified fine sandy loam to gravelly coarse sand, light brownish gray (10YR 6/2) dry; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine interstitial and tubular pores; many medium distinct dark brown (7.5YR 3/4) irregular masses or iron accumulation in the matrix and common medium distinct dark brown (7.5YR 3/4) masses of iron accumulation on rock fragments; 8 percent gravel; slightly acid; abrupt wavy boundary.

- 2C2—33 to 60 inches; dark grayish brown (10YR 4/2) stratified very gravelly coarse sand, light brownish gray (10YR 6/2) dry; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; common fine faint black (10YR 2/1) irregular masses of manganese accumulation in the matrix and common coarse prominent dark reddish brown (5YR 3/4) irregular masses of iron accumulation in the matrix; 55 percent gravel; slightly acid.

Type location: Alpine County, California; on the Toiyabe National Forest in Hope Valley about 1,000 feet north of Highway 88; about 600 feet south and 5,350 feet east of the northwest corner of section 25, T. 10 N., R. 18 E.; USGS Freel Peak 7.5 minute topographic quadrangle; 38 degrees, 46 minutes, 35.3 seconds north latitude and 119 degrees, 55 minutes, 51.5 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually saturated in some part of the moisture control section during winter, spring, and early summer, usually dry in all parts during summer and fall; seasonal periods of aquic moisture regime from November through June during saturation with

ground water and anaerobic conditions; Xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 16 to 30 inches.

Depth to very gravelly or extremely gravelly material: 24 to 40 inches.

Depth to seasonal aquic conditions: 0 to 20 inches.

Control section:

Clay content—Averages 10 to 18 percent.

Rock fragments—Averages 0 to 15 percent in the upper part and 35 to 60 percent in the lower part, mainly gravel. Lithology of fragments are granitic rocks such as granodiorite, volcanic rocks such as tuff, or minor metamorphic rocks such as quartzite.

A1 horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—1 or 2, dry or moist.

Organic matter content—4 to 8 percent.

Reaction—Moderately acid or slightly acid.

A2, A3, and A4 horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—1 or 2, dry or moist.

Texture—Stratified loam to fine sand.

Organic matter content—4 to 8 percent.

Reaction—Moderately acid or slightly acid.

Redoximorphic features—Redox concentrations occur as masses of iron or manganese accumulation in the matrix.

C horizons:

Hue—10YR or 2.5Y.

Value—6 or 7 dry, 4 or 5 moist.

Chroma—1 or 2, dry or moist.

Texture—Stratified very gravelly coarse sand to loam.

Clay content—Averages 5 to 15 percent clay.

Rock fragments—Averages 35 to 60 percent.

Reaction—Moderately acid or slightly acid.

Redoximorphic features—Redox concentrations occur as masses of iron or manganese accumulation in the matrix or as coats on rock fragments.

Indian Creek series

The soils of the Indian Creek series are well-drained soils that are shallow over an indurated duripan. They are on terraces and dissected alluvial fans. Slopes are 0 to 15 percent. The mean annual precipitation is about 10 inches and the mean annual air temperature is about 50 degrees.

Taxonomic class: Clayey, smectitic, mesic, shallow Xeric Argidurids

Typical pedon: Indian Creek extremely gravelly loam, rangeland, in adjacent Douglas County. (Colors are for dry soil unless otherwise noted.)

AE—0 to 1 inch; gray (10YR 6/1) extremely gravelly loam, very dark grayish brown (10YR 3/2) moist; weak thick and moderate thin platy structure; soft, friable, slightly sticky and slightly plastic; many very fine roots; common fine and very fine vesicular pores; few uncoated sand grains; 55 percent pebbles and 5 percent stones; neutral (pH 6.6); abrupt, wavy boundary

A—1 to 3 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak coarse subangular blocky structure parting to strong fine granular; soft, friable, slightly sticky and slightly plastic; many very fine, common fine, and few medium roots; many fine and very fine interstitial pores; many uncoated sand grains; 15 percent pebbles; slightly acid (pH 6.4); abrupt wavy boundary.

Bt1—3 to 5 inches; brown (10YR 5/3) gravelly clay loam, dark brown (10YR 3/3) moist; strong fine subangular blocky structure; hard, friable, very sticky and very plastic; many very fine, common fine, and few medium roots; common very fine and fine tubular and interstitial pores; few uncoated sand grains; many faint clay films on peds; 15 percent rock fragments; slightly acid (pH 6.1) abrupt wavy boundary.

Bt2—5 to 11 inches; brown (7.5YR 4/2) gravelly clay, dark brown (7.5YR 3/2) moist; strong medium prismatic structure; extremely hard, very firm, very sticky and very plastic; many very fine, common fine, and few medium mainly expd roots; many pressure cutans; 20 percent pebbles; slightly acid (pH 6.4); clear smooth boundary.

Bt3—11 to 19 inches; brown (7.5YR 4/2) gravelly clay, dark brown (7.5YR 3/2) moist; strong medium prismatic structure; extremely hard, very firm, very sticky and very plastic; common very fine and few fine and medium roots, mostly expd; few very fine and tubular pores; many pressure cutans; 20 percent pebbles; neutral (pH 7.0); abrupt wavy boundary.

Bt4—19 to 20 inches; yellowish brown (10YR 5/4) gravelly clay, dark brown (7.5YR 3/4) moist; moderate fine subangular blocky structure; hard, friable, very sticky and very plastic; common very fine and few fine and medium roots; few fine tubular and common fine and very fine interstitial pores; common distinct clay films on faces of peds and lining pores; 30 percent pebbles; slightly effervescent; neutral (pH 7.2); abrupt wavy boundary.

2Bqkm—20 to 25 inches; very pale brown (10YR 8/2) cemented material, light yellowish brown (10YR 6/4) moist; massive; extremely hard and very hard; extremely firm and very firm; indurated by secondary silica and carbonates; few very fine and fine roots; few very fine interstitial pores; 70 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.

2Cqk—25 to 36 inches; light gray (10YR 7/2) extremely gravelly loamy coarse sand, dark grayish brown (10YR 4/2) moist; massive; hard, very friable, nonsticky and nonplastic; few very fine and fine roots; many fine interstitial pores; 75 percent pebbles and some cobbles; slightly effervescent; secondary carbonate segregated as coats on bottoms of rock fragments; slightly alkaline (pH 7.8); clear wavy boundary.

2Ck—36 to 51 inches; light brownish gray (10YR 6/2) extremely gravelly loamy coarse sand, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; many fine interstitial pores; 80 percent pebbles; slightly effervescent; secondary carbonates segregated as few fine coats on bottoms of rock fragments; slightly alkaline (pH 7.4); gradual smooth boundary.

2C—51 to 64 inches; light brownish gray (10YR 6/2) extremely gravelly coarse sandy loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; many fine interstitial pores; 60 percent pebbles; neutral (pH 7.0).

Type location: Douglas County, Nevada; about 1.7 miles southeast of Horseshoe Bend; about 1,520 feet west and 1,500 feet north of the southeast corner of section. 12, T.11N., R.20E.; USGS Carters Station 7.5 minute topographic map; 38 degrees, 49 minutes, 39 seconds north latitude and 119 degrees, 40 minutes, 55 seconds north latitude. NAD27.

Range in Characteristics:

Soil moisture: Usually dry, moist during winter and spring.

Soil temperature: 50 to 53 degrees.

Depth to duripan: 14 to 20 inches.

Control section:

Clay content—35 to 55 percent.

A horizons:

Value—5 or 6 dry, 2 or 3 moist.

Chroma—2 or 3.

Reaction—Slightly acid or neutral.

Other—Commonly has desert pavement of pebbles, cobbles and stones lightly coated with desert varnish.

Bt horizons:

Hue—10YR, 7.5YR or 5YR.

Value—4 through 6 dry, 3 through 5 moist.

Chroma—4 through 6.

Texture—Clay, sandy clay or gravelly clay.

Clay content—35 to 55 percent.

Rock fragments—5 to 35 percent, mainly pebbles.

Reaction—Slightly acid to slightly alkaline

Bqkm horizons:

Other features—Continuous indurated cap or plats with strong silica cementation below.

C horizons:

Texture—Loamy coarse sand, coarse sandy loam, sandy loam or sandy clay loam.

Rock fragments—40 to 80 percent, mainly pebbles and some cobbles with a few stones.

Lime accumulation—Occur as filaments or soft masses or as coatings on underside of rock fragments.

Jackflat series

The Jackflat series consists of deep, well drained soils that formed in colluvium and slope alluvium derived from granodiorite. Jackflat soils are on mountains. Slopes are 4 to 30 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 40 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Xeric Argicryolls

Typical pedon: Jackflat very gravelly coarse sandy loam, rangeland, in a delineation of map unit 740. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 5 percent cobbles, and 2 percent stones.

A1—0 to 1 inch; grayish brown (10YR 5/2) very gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine roots, many very fine interstitial pores; 30 percent gravel, 5 percent cobbles; slightly acid; clear smooth boundary.

- A2—1 to 6 inches; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; common very fine tubular and interstitial pores; 40 percent gravel, 5 percent cobbles, 5 percent stones; slightly acid; clear wavy boundary.
- Bt1—6 to 14 inches; brown (10YR 5/3) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; common very fine tubular and interstitial pores; common distinct clay films on faces of peds and lining pores; 40 percent gravel, 5 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.
- Bt2—14 to 23 inches; brown (7.5YR 5/3) extremely cobbly sandy clay loam, brown (7.5YR 4/4) moist; strong medium subangular blocky structure; very hard, firm, moderately sticky and moderately plastic; common very fine and few fine and medium roots; common very fine tubular and interstitial pores; many distinct clay films on faces of peds and lining pores; 40 percent gravel, 15 percent cobbles, and 10 percent stones; slightly acid; clear wavy boundary.
- Bt3—23 to 45 inches; light yellowish brown (10YR 6/4) very stony sandy clay loam, yellowish brown (10YR 5/6) moist; moderate medium subangular blocky structure; hard, friable, moderately sticky and slightly plastic; few very fine roots; common very fine tubular and interstitial pores; common distinct clay films on faces of peds and few prominent clay films lining pores; 25 percent gravel, 5 percent cobbles, and 20 percent stones; 25 percent paragravel; slightly acid; clear wavy boundary.
- 2Cr—45 inches; weathered granodiorite.

Type location: Mono County, California; on the Toiyabe National Forest about 1 mile northeast of Wild Horse Mountain on Jackass Flat; in a nonsectionized township near the projected southeast corner of section 18, T. 8 N., R. 24 E.; USGS Risue Canyon 7.5 minute topographic quadrangle; 38 degrees, 32 minutes, 6.2 seconds north latitude and 119 degrees, 22 minutes, 29.0 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive

days in the four months following the summer solstice; Xeric moisture regime that borders on aridic.
Mean annual soil temperature: 43 to 47 degrees.
Mean summer soil temperature: 54 to 59 degrees.
Mollic epipedon thickness: 10 to 16 inches; includes the Bt1 horizon.
Depth to base of argillic horizon: 40 to 60 inches.
Depth to bedrock: 40 to 60 inches to a paralithic contact.
 The paralithic materials below the contact are weathered granitic rock.
Particle-size control section:
 Clay content—Averages 18 to 27 percent.
 Rock fragments—Averages 35 to 60 percent.
 Lithology of rock fragments is granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.
 Chroma—2 or 3, dry or moist.
 Organic matter content—2 to 4 percent.
 Reaction—Slightly acid or neutral.

Bt1 horizon:

Chroma—2 or 3, dry or moist.
 Texture—Very gravelly sandy loam or very gravelly sandy clay loam.
 Clay content—15 to 25 percent.
 Rock fragments—35 to 60 percent.
 Organic matter content—1 to 3 percent.
 Reaction—Slightly acid or neutral.

Bt2 and Bt3 horizons:

Hue—10YR or 7.5YR.
 Value—5 or 6 dry, 4 or 5 moist.
 Chroma—3 or 4 dry, 4 or 6 moist.
 Clay content—20 to 27 percent.
 Rock fragments—35 to 60 percent.
 Reaction—Slightly acid or neutral.

Jobsis series

The Jobsis series consists of shallow, somewhat excessively drained soils that formed in colluvium and residuum derived from granitic rock. Jobsis soils are on mountains. Slopes are 8 to 75 percent. The mean annual precipitation is about 45 inches and the mean annual temperature is about 35 degrees.

Taxonomic class: Sandy-skeletal, mixed, shallow Typic Cryorthents

Typical pedon: Jobsis very gravelly loamy coarse sand, forestland, in a delineation of map unit 110. (Colors

are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 5 percent stones, and 15 percent boulders.

A1—0 to 1 inch; dark grayish brown (10YR 4/2) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 50 percent gravel and 5 percent boulders; strongly acid; clear wavy boundary.

A2—1 to 5 inches; grayish brown (10YR 5/2) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine, common medium, and common coarse roots; many very fine interstitial pores; 50 percent gravel and 5 percent boulders; strongly acid; clear wavy boundary.

Bw1—5 to 9 inches; pale brown (10YR 6/3) very gravelly loamy coarse sand, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine, common medium, and common coarse roots; many very fine interstitial pores; 55 percent gravel; strongly acid; clear wavy boundary.

Bw2—9 to 12 inches; pale brown (10YR 6/3) very gravelly loamy coarse sand, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, common fine, common medium, common fine, and common coarse roots; many very fine interstitial pores; 50 percent gravel; strongly acid; clear wavy boundary.

Bw3—12 to 17 inches; pale brown (10YR 6/3) very gravelly loamy coarse sand, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine interstitial and tubular pores; 45 percent gravel; strongly acid; clear wavy boundary.

2C—17 to 20 inches; pale brown (10YR 6/3) very gravelly coarse sand, brown (10YR 4/3) moist; massive-rock structure; slightly hard, very friable, nonsticky and nonplastic; few very fine and few fine roots; many very fine interstitial pores; 50 percent gravel; strongly acid; clear wavy boundary.

2Cr—20 to 30 inches; soft weathered granodiorite.

Type location: Alpine County, California; on the Toiyabe National Forest about 1 mile southeast of Hawkins Peak; about 2,200 feet north and 1,825 feet east of the southwest corner of section 11, T. 10 N., R. 19 E.; USGS Markleeville 7.5 minute topographic quadrangle; 38 degrees, 43 minutes, 34.9 seconds north latitude and 119 degrees, 51 minutes, 42.0 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 35 to 40 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Ochric epipedon thickness: 3 to 9 inches.

Depth to bedrock: 10 to 20 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rock such as granodiorite.

Particle-size control section:

Clay content—Averages less than 10 percent.

Rock fragments—Averages 35 to 60 percent, mainly fine gravel. Lithology of fragments are granitic rocks such as granodiorite.

A horizons:

Value—5 or 6 dry, 3 or 4 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Very strongly acid or strongly acid.

Bw and 2C horizons:

Chroma—3 or 4, dry or moist.

Texture—Very gravelly loamy coarse sand or very gravelly coarse sand.

Clay content—4 to 10 percent.

Rock fragments—35 to 60 percent, mainly fine (2 to 5 millimeter diameter) gravel.

Reaction—Very strongly acid or strongly acid.

Joecut series

The Joecut series consists of very deep, moderately well drained or well drained soils that formed in colluvium and residuum derived from tuff, tuff-breccia, and andesite. Joecut soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, isotic, frigid Ultic Palexeralfs

Typical pedon: Joecut very gravelly peaty loam, forestland, in a delineation of map unit 380. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 15 percent gravel, 15 percent cobbles, 5 percent stones, and 5 percent boulders.

Oi—0 to 1 inch; Slightly decomposed plant material composed of fibrous needle litter.

A1—1 to 2 inches; very dark gray (10YR 3/1) very gravelly peaty loam, black (10YR 2/1) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine interstitial pores; 30 percent gravel, 5 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

A2—2 to 5 inches; dark grayish brown (10YR 4/2) very gravelly loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common very fine interstitial and tubular pores; 30 percent gravel, 5 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

A3—5 to 14 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine interstitial and tubular pores; 45 percent gravel, 5 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

Bt1—14 to 22 inches; light brownish gray (10YR 6/2) very gravelly loam, dark grayish brown (10YR 4/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine to medium and many coarse roots; common very fine interstitial and tubular pores; few distinct clay films on faces of peds and lining pores; 40 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.

Bt2—22 to 40 inches; 70 percent light olive brown (2.5Y 5/4) and 30 percent brownish yellow (10YR 6/6) very gravelly clay loam, 70 percent olive brown (2.5Y 4/3) and 30 percent yellowish brown (10YR 5/6) moist; moderate fine and medium subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; few very fine and fine roots; common very fine interstitial and tubular pores; common distinct clay films on faces of peds and lining pores; 40 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.

Bt3—40 to 60 inches; 70 percent brownish yellow (10YR 6/6) and 30 percent light olive brown (2.5Y 5/4) very cobbly clay loam, 70 percent yellowish brown (10YR 5/6) and 30 percent olive brown (2.5Y 4/3) moist; massive; hard, very friable, moderately sticky and moderately plastic; few very fine and fine roots; common very fine interstitial and tubular pores; common distinct clay films on rock fragments and lining pores; 25 percent gravel, 20 percent cobbles, and 5 percent stones; slightly acid.

Type location: Alpine County, California; on the Toiyabe National Forest about 1.5 miles south-southeast of the Leviathan Mine; about 1,800 feet north and 900 feet east of the southwest corner of section 26, T. 10 N., R. 21 E.; USGS Heenan Lake 7.5 minute topographic quadrangle; 38 degrees, 40 minutes, 55.6 seconds north latitude and 119 degrees, 38 minutes, 52.5 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Umbric epipedon thickness: 10 to 20 inches.

Depth to base of argillic horizon: More than 60 inches.

Depth to bedrock: 60 to 80 inches to a paralithic contact.

The paralithic materials below the contact are weathered volcanic rocks such as andesitic tuff.

Sodium fluoride pH: 8.5 to 9.5.

Particle-size control section:

Clay content—Averages 25 to 35 percent.

Rock fragments—Averages 35 to 50 percent.

Lithology of fragments are volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizons:

Value—3 through 5 dry, 2 or 3 moist; dry value of 3 present only in the A1 horizon.

Chroma—1 through 3, dry or moist; chroma of 1 present only in the A1 horizon.

Organic matter content—10 to 15 percent in the A1 horizon (when present) and 2 to 8 percent in the A2 and A3 horizons, decreasing with depth.

Reaction—Moderately acid or slightly acid.

Bt horizons:

Hue—7.5YR through 2.5Y.

Value—5 or 6 dry, 4 or 5 moist.

Chroma—2 through 6, dry or moist.

Texture—Very gravelly loam, very gravelly clay loam, very gravelly sandy clay loam, or very cobbly clay loam.

Clay content—25 to 35 percent.

Rock fragments—35 to 50 percent.

Reaction—Moderately acid or slightly acid.

Other features—Some pedons have dual or variegated horizon matrix colors in lower subhorizons that may be redox concentrations of iron.

Joenchris series

The Joenchris series consists of very deep, well drained soils that formed in alluvium derived from volcanic and metavolcanic rocks. Joenchris soils are on fan remnants. Slopes are 4 to 30 percent. The mean annual precipitation is about 15 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Fine, smectitic, frigid Vertic Palexerolls

Typical pedon: Joenchris gravelly ashy sandy loam, rangeland, in a delineation of map unit 720. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 20 percent gravel and 10 percent stones.

A—0 to 2 inches; grayish brown (10YR 5/2) gravelly ashy sandy loam, very dark grayish brown (10YR 3/2) moist; moderate thick platy structure parting to weak fine granular; soft, very friable, slightly sticky and nonplastic; many very fine and few fine roots; many very fine and common fine vesicular pores; 15 percent gravel and 5 percent cobbles; slightly acid; clear smooth boundary.

AE—2 to 6 inches; 70 percent grayish brown (10YR 5/2) with 20 percent light brownish gray (10YR 6/2) gravelly ashy sandy loam, very dark grayish brown (10YR 3/2) moist; weak thick platy structure parting to moderate fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine, common fine and few medium roots; common very fine tubular and few fine vesicular pores; 15 percent gravel and 5 percent cobbles; slightly acid; abrupt wavy boundary.

Bt—6 to 14 inches; brown (10YR 5/3) gravelly clay loam, dark brown (10YR 3/3) moist; weak medium prismatic structure parting to moderate medium angular blocky; moderately hard, friable, moderately sticky and moderately plastic; common very fine and fine and

few medium and coarse roots; common very fine tubular pores; many distinct clay films on faces of peds and lining pores; 15 percent gravel and 5 percent cobbles; slightly acid; abrupt wavy boundary.

Btss—14 to 26 inches; brown (10YR 5/3) clay, brown (10YR 4/3) moist; weak coarse prismatic structure parting to moderate medium angular blocky; very hard, very firm, very sticky and very plastic; few very fine and fine roots; few very fine tubular pores; common 5 to 10 mm wide reversible trans-horizon cracks; common distinct slickensides on bottoms of prisms; 10 percent gravel; neutral; clear wavy boundary.

Btk—26 to 60 inches; light yellowish brown (2.5Y 6/4) very cobbly clay loam, light olive brown (2.5Y 5/4) moist; weak coarse prismatic structure; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; common very fine interstitial and few very fine tubular pores; common distinct clay films on faces of peds; secondary carbonates segregated as few coarse coats on the bottoms of rock fragments; 15 percent gravel, 35 percent cobbles, and 2 percent stones; slightly alkaline.

Type location: Mono County, California; on the Toiyabe National Forest east of the Sweetwater Mountains on Wedertz Flat; in a nonsectionized township in the projected NW 1/4 of the SE 1/4 of section 10, T. 6 N., R. 25 E.; Sweetwater Creek USGS 7.5 minute topographic quadrangle; 38 degrees, 22 minutes, 47.3 seconds north latitude and 119 degrees, 12 minutes, 54.9 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive days in the four months following the summer solstice; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 40 to 47 degrees.

Mollic epipedon thickness: 10 to 16 inches; includes the Bt horizon.

Depth to base of argillic horizon: 45 to more than 60 inches.

Depth to horizons with secondary carbonates: 25 to 35 inches.

Particle-size control section:

Clay content—Averages 35 to 45 percent.

Rock fragments—Averages 5 to 15 percent, mainly gravel. Lithology of fragments are volcanic rocks such as andesite, tuff, and tuff-breccia or metavolcanic rocks.

Linear extensibility (LE)—6 to 10 cm (estimated).

A and AE horizons:

Chroma—2 or 3, dry or moist.
Organic matter content—2 to 4 percent.
Reaction—Slightly acid or neutral.

Bt horizon:

Hue—10YR or 7.5YR. Chroma—2 or 3, dry or moist.
Texture—Gravelly clay loam or gravelly clay.
Clay content—35 to 45 percent.
Rock fragments—15 to 25 percent.
Organic matter content—1 to 3 percent.
Reaction—Slightly acid or neutral.

Btss horizon:

Hue—10YR or 7.5YR.
Value—5 or 6 dry, 4 or 5 moist.
Chroma—3 or 4, dry or moist.
Clay content—40 to 50 percent.
Rock fragments—0 to 15 percent.
Structure—Prismatic parting either to angular blocky or wedge structure.
Reaction—Slightly acid or neutral.
Vertic features—Slickensides occur as few or common grooved surfaces on bases of prisms or wedges; Few or common, 5 to 10 mm wide, reversible trans-horizon cracks.

Btk horizon:

Hue—2.5Y through 7.5YR.
Value—5 or 6 dry, 4 or 5 moist.
Chroma—3 or 4, dry or moist.
Texture—Very cobbly clay loam or very gravelly clay loam.
Rock fragments—35 to 60 percent.
Identifiable secondary carbonates—Occur as few coats on rock fragments, lining pores, or faces of peds.
Effervescence—Noneffervescent or slightly effervescent matrix.
Calcium carbonate equivalent—1 to 3 percent.
Reaction—Neutral or slightly alkaline.

Kiote series

The Kiote series consists of very deep, well drained soils that formed in residuum and colluvium of weathered andesitic and rhyolitic rocks, with additions of aeolian volcanic ash. Kiote soils are on mountain slopes. Slopes are 15 to 50 percent. The mean annual precipitation is

about 16 inches and the mean annual temperature is about 43 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Vitrandic Argicryolls

Typical pedon: Kiote gravelly ashy loam, rangeland, in a delineation of map unit 262. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel and 5 percent cobbles.

A1—0 to 6 inches; grayish brown (10YR 5/2) gravelly ashy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 20 percent gravel; slightly acid; clear smooth boundary.

A2—6 to 10 inches; grayish brown (10YR 5/2) very gravelly ashy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots; common very fine and fine tubular and interstitial pores; 35 percent gravel; neutral; clear wavy boundary.

A3—10 to 17 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine and fine roots; common very fine tubular and interstitial pores; 35 percent gravel; neutral; clear wavy boundary.

2Bt—17 to 30 inches; yellowish brown (10YR 5/4) very gravelly loam, dark yellowish brown (10YR 3/4) moist; moderate fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; common very fine interstitial and tubular pores; few faint clay films on faces of peds and lining pores; 45 percent gravel; neutral; clear wavy boundary.

2C—30 to 60 inches; yellowish brown (10YR 5/4) extremely gravelly loam, dark yellowish brown (10YR 4/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular and interstitial pores; clay coatings on rock fragments due to vertical and lateral water movement in pores; 60 percent gravel; neutral.

Type location: Mono County, California; about 1 mile south of Masonic; about 1,000 feet north and 1,200 feet east of the southwest corner of section 22, T. 6N., R. 26 E.; Dome Hill USGS 7.5 minute topographic quad; 38 degrees, 20 minutes, 48.5

seconds north latitude, 119 degrees, 06 minutes,
47.6 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually moist in winter and early spring, dry in summer and fall; dry in all parts for at least 45 consecutive days following the summer solstice;

Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 41 to 45 degrees.

Mean summer soil temperature: 54 to 59 degrees.

Mollic epipedon thickness: 16 to 24 inches; does not include the 2Bt horizon.

Depth to base of argillic horizon: 20 to 40 inches.

Depth to bedrock: More than 60 inches.

Particle-size control section:

Clay content—18 to 25 percent.

Rock fragments—45 to 60 percent, mainly gravel with less than 15 percent cobbles and stones. Lithology of fragments are; volcanic rocks such as andesite or rhyolite.

A1 and A2 horizons:

Value—4 or 5 dry.

Chroma—2 or 3, dry or moist.

Clay content—10 to 20 percent.

Organic matter content—2 to 5 percent.

Volcanic glass content—30 to 75 percent in coarse silt through fine sand fractions.

A3 horizon:

Value—4 or 5 dry.

Chroma—2 or 3, dry or moist.

Clay content—10 to 18 percent.

Organic matter content—1 to 3 percent.

Volcanic glass content—30 to 75 percent in coarse silt through fine sand fractions.

2Bt horizon:

Value—4 or 5 dry, 3 or 4 moist.

Chroma—2 through 4, dry or moist.

Clay content—18 to 25 percent.

Rock fragments—45 to 80 percent.

2C horizon:

Texture—Extremely gravelly loam, extremely gravelly sandy loam, or extremely gravelly coarse sandy loam.

Clay content—10 to 25 percent.

Other features—Some pedons have clay coats on rock fragments due to vertical and lateral water movements; Sand grains are usually not coated with clay due to removal by lateral water movements.

Klauspeak series

The Klauspeak series consists of very deep, somewhat excessively drained soils that formed in colluvium derived from granitic rock. Klauspeak soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 45 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Sandy-skeletal, mixed Xeric Dystrocryepts

Typical pedon: Klauspeak gravelly loamy sand, forestland, in a delineation of map unit 130. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 15 percent gravel, 5 percent stones, and 5 percent boulders.

- A1—0 to 5 inches; dark grayish brown (10YR 4/2) gravelly loamy sand, very dark brown (10YR 2/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; common very fine interstitial pores and few very fine tubular pores; 10 percent gravel and 5 percent stones; strongly acid; clear wavy boundary.
- A2—5 to 16 inches; grayish brown (10YR 5/2) gravelly loamy sand, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine to coarse roots; common very fine interstitial and tubular pores; 15 percent gravel and 5 percent stones; strongly acid; clear wavy boundary.
- Bw1—16 to 22 inches; pale brown (10YR 6/3) very stony loamy sand, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, common fine, common medium, and common coarse roots; common very fine interstitial and tubular pores; 15 percent gravel and 10 percent cobbles; strongly acid; clear wavy boundary.
- Bw2—22 to 40 inches; olive yellow (2.5Y 6/6) very stony loamy coarse sand, olive brown (2.5Y 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and common very coarse roots; common very fine interstitial and tubular pores; 20 percent gravel and 10 percent cobbles and 10 percent stones; strongly acid; clear wavy boundary.
- C—40 to 60 inches; light yellowish brown (2.5Y 6/4) very cobbly coarse sand, olive brown (2.5Y 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common medium and coarse roots and few fine;

many very fine interstitial pores; 30 percent gravel and 25 percent cobbles; strongly acid.

Rock fragments—35 to 50 percent.
Reaction—Strongly acid or moderately acid.

Type location: Alpine County, California; on the Toiyabe National Forest about 1 mile southwest of Luther Pass and about 2,200 feet west-northwest of Waterhouse Peak; about 400 feet south and 1,800 feet west of the northeast corner of section 26, T. 10 N., R. 18 E.; USGS Freel Peak 7.5 minute topographic quadrangle; 38 degrees, 46 minutes, 37.5 seconds north latitude and 119 degrees, 57 minutes, 19.4 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Umbric epipedon thickness: 10 to 20 inches.

Depth to bedrock: 60 to 80 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rock such as granodiorite.

Particle-size control section:

Clay content—Averages 3 to 10 percent.

Rock fragments—Averages 35 to 50 percent, mainly stones and cobbles. Lithology of fragments are granitic rocks such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Strongly acid or moderately acid.

Bw horizons:

Hue—10YR or 2.5Y.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Very stony loamy sand or very stony loamy coarse sand.

Clay content—3 to 10 percent.

Rock fragments—35 to 50 percent.

Reaction—Strongly acid or moderately acid.

C horizon:

Hue—10YR or 2.5Y.

Chroma—3 or 4, dry or moist.

Texture—Very cobbly coarse sand or very stony loamy coarse sand.

Clay content—3 to 10 percent.

Koontz series

The Koontz series consists of shallow, well drained soils that formed in residuum and colluvium weathered from metavolcanic rocks. The Koontz soils are located on hills and low mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 50 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic, shallow Aridic Argixerolls

Typical pedon: Koontz very gravelly sandy loam, rangeland, in a delineation of map unit 640. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; common very fine interstitial pores; 50 percent gravel; neutral, clear wavy boundary.

Bt1—2 to 7 inches; light olive brown (2.5Y 5/3) very gravelly loam, dark olive brown (2.5Y 3/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, moderately sticky and moderately plastic; many very fine and fine roots; common very fine tubular and interstitial pores; common faint clay films bridging sand grains; 50 percent gravel; neutral; clear wavy boundary.

Bt2—7 to 12 inches; light yellowish brown (2.5Y 6/3) very gravelly loam, olive brown (2.5Y 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; few very fine and fine roots; common very fine tubular and interstitial pores; common faint clay films bridging sand grains; 40 percent gravel; neutral; clear wavy boundary.

Cr—12 to 22 inches; soft gneiss bedrock that is fractured.

Type location: Mono County, California; on the Toiyabe National Forest about 0.4 mile south of Blackwell Canyon; about 550 feet north and 2,400 feet west of the southeast corner of section 34, T. 9 N.; R. 23 E.; USGS Risue Canyon 7.5 minute topographic quadrangle; 38 degrees, 34 minutes, 28.6 seconds

north latitude and 119 degrees, 26 minutes, 13.6 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually moist in winter and spring, dry in summer through late fall; aridic moisture regime that borders on xeric.

Mean annual soil temperature: 50 to 55 degrees.

Mollic epipedon thickness: 7 to 14 inches.

Depth to a bedrock: 8 to 20 inches to paralithic contact.

The paralithic materials below the contact are weathered metavolcanic rocks.

Control section:

Clay content—Averages 20 to 25 percent.

Rock fragments—Averages 35 to 60 percent, dominantly gravel. Lithology of rock fragments is metavolcanic rocks such as gneiss.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3 dry or moist.

Reaction—Neutral or slightly alkaline.

Bt horizon:

Hue—10YR or 2.5Y.

Value—4 through 6 dry, 3 or 4 moist.

Chroma—2 through 4 dry or moist.

Texture—Very gravelly loam or very gravelly clay loam.

Clay content—22 to 30 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid to moderately alkaline.

Lavaspring series

The Lavaspring series consists of very deep, poorly drained soils that formed in alluvium derived from mixed igneous rocks with surficial additions of eolian volcanic ash. Lavaspring soils are on stream terraces and flood plains. Slopes are 0 to 4 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Fine-loamy, mixed, superactive Aquandic Cryaquolls

Typical pedon: Lavaspring mucky ashy loam, rangeland, in a delineation of map unit 840. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 5 percent gravel.

A1—0 to 3 inches; dark grayish brown (10YR 4/2) mucky ashy loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, many fine, and many medium roots; many very fine interstitial pores; 5 percent gravel; slightly acid; clear wavy boundary.

A2—3 to 7 inches; dark grayish brown (10YR 4/2) ashy loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, many, fine, and many medium roots; many very fine interstitial and common very fine tubular pores; common fine distinct dark yellowish brown (10YR 4/4) moist irregular masses of iron accumulation in the matrix; 10 percent gravel; slightly acid; abrupt smooth boundary.

A3—7 to 11 inches; dark grayish brown (10YR 4/2) extremely gravelly loamy coarse sand, very dark brown (10YR 2/2) moist; single grain; loose, nonsticky and nonplastic; many very fine, many fine, and many medium roots; many very fine and fine interstitial pores; common fine distinct brown (7.5YR 4/4) moist irregular masses of iron accumulation in the matrix; 65 percent gravel; neutral; abrupt smooth boundary.

A4—11 to 20 inches; very dark gray (10YR 3/1) clay loam, black (N 2.5/0) moist; strong fine and medium subangular blocky structure; slightly hard, very friable, very sticky and moderately plastic; common very fine, many fine, and many medium roots; common very fine tubular and interstitial pores; common fine prominent brown (7.5YR 4/4) moist irregular masses of iron accumulation in the matrix; 5 percent gravel; neutral; clear wavy boundary.

A5—20 to 31 inches; gray (10YR 5/1) loam, black (10YR 2/1) moist; weak coarse prismatic structure; very hard, firm, moderately sticky and moderately plastic; common very fine, common fine, and common medium roots; common very fine tubular and few very fine interstitial pores; common fine distinct dark yellowish brown (10YR 3/4) moist irregular masses of iron accumulation in the matrix; 10 percent gravel; neutral; clear wavy boundary.

A6—31 to 37 inches; grayish brown (10YR 5/2) gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine, few fine, and few medium roots; common very fine tubular and interstitial pores; common distinct dark yellowish brown (10YR 4/4) moist irregular masses of iron accumulation in the matrix; 30 percent gravel; neutral; clear wavy boundary.

A7—37 to 60 inches; grayish brown (10YR 5/2) extremely gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; few very fine and few fine roots; common very fine tubular and interstitial pores; common fine and medium distinct dark yellowish brown (10YR 3/4) moist irregular masses of iron accumulation in the matrix; 70 percent gravel; neutral.

Type location: Mono County, California; on the Toiyabe National Forest along Burcham Creek; about 1,520 feet south and 1,080 feet west of the northeast corner of section 10, T. 6 N., R. 23 E.; USGS Chris Flat 7.5 minute topographic quadrangle; 38 degrees, 23 minutes, 01.5 seconds north latitude and 119 degrees, 25 minutes, 56.5 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually saturated in some part of the moisture control section during winter, spring, and early summer, usually dry in all parts during summer and fall; Xeric moisture regime with seasonal periods of aquic moisture regime from November through June during saturation with ground water and anaerobic conditions.

Mean annual soil temperature: 42 to 47 degrees.

Mean summer soil temperature: 52 to 59 degrees.

Mollic epipedon thickness: 30 to 60 inches.

Thickness of ashy subhorizons: 7 to 11 inches, occurring immediately below the soil surface.

Particle-size control section:

Clay content—Averages 18 to 25 percent; strata in the upper part averages 18 to 28 percent and strata in the lower part averages 8 to 18 percent.

Rock fragments—Averages 15 to 35 percent, mainly gravel. Lithology of fragments are granitic rocks such as granodiorite, volcanic rocks such as tuff or andesite, and minor metamorphic rocks such as quartzite.

A1 and A2 horizons:

Hue—10YR or neutral (N).

Value—3 or 4 dry.

Chroma—1 or 2 dry, 0 (when hue is N), 1, or 2 moist.

Organic matter content—6 to 10 percent.

Reaction—Slightly acid or neutral.

Volcanic glass content—5 to 25 percent in the coarse silt through fine sand fractions.

Oxalate Al + 1/2 oxalate iron—0.2 to 0.4 percent.

A3, A4, and A5 horizons:

Hue—10YR or neutral (N).

Value—3 through 5 dry.

Chroma—1 or 2 dry, 0 (when hue is N) 1, or 2 moist.

Texture—Stratified extremely gravelly loamy coarse sand to clay loam; loam or clay loam textures predominate.

Clay content—Averages 18 to 28 percent.

Rock fragments—Averages 15 to 35 percent.

Organic matter content—3 to 5 percent.

Reaction—Slightly acid or neutral.

A6 and A7 horizon:

Hue—10YR or 2.5Y.

Value—4 or 5 dry, 2 or 3 moist.

Texture—Stratified extremely gravelly coarse sandy loam to gravelly sandy loam.

Clay content—8 to 18 percent.

Rock fragments—Averages 50 to 80 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Leroman series

The Leroman series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from tuff, tuff-breccia, and andesite. Leroman soils are on mountains. Slopes are 8 to 30 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Pachic Argixerolls

Typical pedon: Leroman very gravelly sandy loam, rangeland, in a delineation of map unit 350. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 30 percent gravel, 5 percent cobbles, and 5 percent stones.

A—0 to 5 inches; dark grayish brown (10YR 4/2) very gravelly sandy loam, very dark brown (10YR 2/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; common very fine tubular and interstitial pores; 45 percent gravel, 5 percent cobbles and 5 percent stones; neutral; clear wavy boundary.
Bt1—5 to 16 inches; dark grayish brown (10YR 4/2) very gravelly sandy clay loam, very dark brown (10YR 2/2) moist; moderate fine and medium subangular blocky structure; hard, friable, moderately

sticky and moderately plastic; many very fine through medium roots; common very fine tubular and interstitial pores; common faint clay films on faces of peds and lining pores; 35 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.

Bt2—16 to 23 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; very hard, friable, moderately sticky and moderately plastic; common very fine through medium roots; common very fine tubular and interstitial pores; many distinct clay films on faces of peds and lining pores; 40 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.

Bt3—23 to 34 inches; pale brown (10YR 6/3) very gravelly sandy clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; very hard, friable, moderately sticky and moderately plastic; few very fine and fine roots; few very fine tubular and interstitial pores; many distinct clay films on faces of peds and lining pores; 40 percent gravel and 15 percent cobbles; neutral; clear wavy boundary.

Cr—34 to 43 inches; weathered ash-flow tuff.

R—43 inches; hard, unweathered ash-flow tuff.

Type location: Alpine County, California; on the Toiyabe National Forest about 1.5 miles south of the Leviathan Mine; about 1,100 feet north and 1,600 feet east of the southwest corner of section 27, T. 10 N., R. 21 E.; USGS Heenan Lake 7.5 minute topographic quadrangle; 38 degrees, 40 minutes, 50.1 seconds north latitude and 119 degrees, 39 minutes, 43.9 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degree.

Mollic epipedon thickness: 20 to 30 inches, includes the Bt1 and Bt2 horizons.

Depth to bedrock: 20 to 40 inches to a paralithic contact.

The paralithic materials below the contact are weathered volcanic rocks such as andesitic tuff.

Sodium fluoride pH: 8.5 to 9.0.

Particle-size control section:

Clay content—Averages 18 to 27 percent.

Rock fragments—Averages 35 to 60 percent, mainly pebbles. Lithology of fragments are volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—3 to 5 percent.

Reaction—Slightly acid or neutral.

Bt1 and Bt2 horizons:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly sandy clay loam, very gravelly loam, or very gravelly sandy loam.

Clay content—18 to 27 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt3 horizon:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly sandy clay loam, very gravelly loam, or very gravelly sandy loam.

Clay content—18 to 27 percent.

Rock fragments—35 to 60 percent.

Organic matter content—0.5 to 1 percent.

Reaction—Slightly acid or neutral.

Leviathan series

The Leviathan series consists of very deep, well drained soils that formed in alluvium derived mainly from granitic rocks. Leviathan soils are on stream terraces and fan remnants. Slopes are 15 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 48 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Aridic Argixerolls

Typical pedon: Leviathan very gravelly sandy loam, rangeland, in a delineation of map unit 851. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 45 percent gravel, 15 percent cobbles and 2 percent stones.

A1—0 to 3 inches; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR

3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 40 percent gravel, 10 percent cobbles; slightly acid; clear wavy boundary

A2—3 to 10 inches; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine tubular and interstitial pores; 40 percent gravel, 10 percent cobbles; slightly acid; clear wavy boundary.

Bt1—10 to 14 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine, fine and medium roots; common very fine tubular and interstitial pores; few distinct clay films coating ped faces and lining pores; 40 percent gravel, 10 percent cobbles; slightly acid; clear wavy boundary.

Bt2—14 to 30 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; strong medium subangular blocky structure; very hard, friable, moderately sticky and moderately plastic; common very fine, fine, medium and coarse roots; common very fine tubular and interstitial pores; many distinct clay films coating ped faces and lining pores; 40 percent gravel, 15 percent cobbles; slightly acid; clear wavy boundary.

Bt3—30 to 60 inches; light yellowish brown (10YR 6/4) very gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine tubular and interstitial pores; common faint clay films bridging sand grains; 45 percent gravel, 10 percent cobbles; slightly acid.

Type location: Mono County, California; on the Toiyabe National Forest about 1.5 miles northwest of Devils Gate; about 950 feet north and 800 feet east of the southwest corner of section 27, T. 7 N.; R. 25 E.; USGS Sweetwater Creek 7.5 minute topographic quadrangle; 38 degrees, 21 minutes, 55.5 seconds north latitude and 119 degrees, 10 minutes, 56.8 seconds west longitude

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section in winter and spring, dry in summer and fall; aridic moisture regime that borders on xeric.

Mean annual soil temperature: 47 to 53 degrees.

Mollic epipedon thickness: 9 to 14 inches, may include the Bt1 horizon in some pedons.

Depth to base of argillic horizon: 40 to 70 inches.

Reaction: Slightly acid or neutral.

Surface stoniness: 0 to 15 percent.

Particle-size control section:

Clay content—Averages 26 to 35 percent.

Sand content—35 to 45 percent coarse sand plus very coarse sand (55 to 65 percent of the total sand fraction).

Rock fragments—Averages 50 to 60 percent, mostly pebbles and includes cobbles and stones.

Lithology of fragments are granitic rocks such as granite or volcanic rocks such as andesite.

A horizon:

Value—4 or 5 dry.

Chroma—2 or 3, dry or moist.

Structure—Subangular blocky but immediate surface is granular or single grain in some pedons.

Organic matter content—1 to 3 percent.

Bt horizons:

Hue—10YR or 7.5YR

Value—5 or 6 dry, 3 through 5 moist.

Chroma—3 or 4, dry or moist.

Texture—Very cobbly sandy clay loam or very gravelly sandy clay loam in upper subhorizons, but some pedons have very gravelly coarse sandy loam or very gravelly clay loam; lower subhorizons are dominantly very gravelly sandy clay loam, but some pedons have subhorizons of extremely gravelly sandy clay loam, very gravelly coarse sandy loam, or very gravelly clay loam.

Rock fragments—The upper 20 inches is 35 to 50 percent pebbles and 10 to 20 percent cobbles and stones; lower subhorizons have 50 to 75 percent of which 10 to 22 percent are cobbles, stones, or boulders.

Structure—Prismatic or blocky in the upper part, blocky or is massive in the lower part.

Other features—Below 24 inches cobbles and stones are often highly weathered pararock fragments which easily crush to fine pebbles and very coarse sand.

Lithnup series

The Lithnup series consists of very shallow, well drained soils that formed in residuum and colluvium derived from tuff, tuff-breccia, and andesite. Lithnup soils are on

mountains. Slopes are 8 to 75 percent. The mean annual precipitation is about 45 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, isotic, nonacid Lithic Cryorthents

Typical pedon: Lithnip extremely gravelly sandy loam, rangeland, in a delineation of map unit 100. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 60 percent gravel and less than 1 percent stones.

A—0 to 2 inches; light yellowish brown (10YR 6/4) extremely gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; 70 percent gravel; slightly acid; clear wavy boundary.

C—2 to 5 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; 55 percent gravel; slightly acid; abrupt wavy boundary.

R—5 inches; hard tuff.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.9 mile northeast of The Nipple peak; about 750 feet south and 1,250 feet west of the northeast corner of section 7, T. 9 N., R. 19 E.; USGS Carson Pass 7.5 minute topographic quadrangle; 38 degrees, 39 minutes, 10.0 seconds north latitude and 119 degrees, 55 minutes, 41.6 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 54 to 59 degrees.

Depth to bedrock: 4 to 10 inches to a lithic contact.

Sodium fluoride pH: 8.5 to 10.0.

Control section:

Clay content—Averages 12 to 18 percent.

Rock fragments—Averages 60 to 80 percent, dominantly gravel. Lithology of fragments is volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—2 through 4, dry or moist.

Organic matter content—1 or 2 percent.

Clay content—10 to 18 percent.

Rock fragments—60 to 80 percent, dominantly gravel.

Reaction—Slightly acid or neutral.

C horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Very gravelly sandy loam or extremely gravelly sandy loam.

Clay content—12 to 18 percent.

Rock fragments—50 to 80 percent.

Reaction—Slightly acid or neutral.

Lockgate series

The Lockgate series consists of deep, well drained soils that formed in colluvium and residuum derived from granitic rock. Lockgate soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Pachic Argixerolls

Typical pedon: Lockgate very gravelly loamy coarse sand, rangeland, in a delineation of map unit 530. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 40 percent gravel, 5 percent cobbles, 5 percent stones, and 5 percent boulders.

A1—0 to 4 inches; dark grayish brown (10YR 4/2) very gravelly loamy coarse sand, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial and few very fine tubular pores; 25 percent fine gravel (2 to 5 mm diameter) and 10 percent medium through coarse gravel (5 to 75 mm diameter); neutral; clear wavy boundary.

A2—4 to 14 inches; dark grayish brown (10YR 4/2) very gravelly loamy coarse sand, very dark brown (10YR 2/2) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine tubular and interstitial pores; 25 percent fine

gravel (2 to 5 mm diameter) and 10 percent medium through coarse gravel (5 to 75 mm diameter); neutral; clear wavy boundary.

- Bt1**—14 to 23 inches; grayish brown (10YR 5/2) extremely stony coarse sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; common very fine, fine and medium roots; common very fine tubular and interstitial pores; few faint clay films bridging sand grains; 25 percent fine gravel (2 to 5 mm diameter), 20 percent medium through coarse gravel (5 to 75 mm diameter), 10 percent cobbles, and 20 percent stones; neutral; clear wavy boundary.
- Bt2**—23 to 34 inches; pale brown (10YR 6/3) extremely gravelly coarse sandy loam, brown (10YR 4/3) moist; slightly hard, very friable, nonsticky and nonplastic; few very fine and common fine and medium roots; common very fine tubular and interstitial pores; few faint clay films bridging sand grains; 25 percent fine gravel (2 to 5 mm diameter), 25 percent medium through coarse gravel (5 to 75 mm diameter), and 10 percent cobbles; slightly acid; clear wavy boundary.
- C**—34 to 42 inches; pale brown (10YR 6/3) extremely gravelly loamy coarse sand, brown (10YR 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine and medium roots; many very fine interstitial pores; 45 percent fine gravel (2 to 5 mm diameter), 20 percent medium through coarse gravel (5 to 75 mm diameter), and 10 percent cobbles; slightly acid; clear wavy boundary.
- Cr**—42 to 50 inches; weathered granitic rock.

Type location: Mono County, California; on the Toiyabe National Forest about 4.5 miles southwest of the town of Walker; about 1,400 feet south and 50 feet west of the southeast corner of section 18, T. 7 N., R. 22 E.; USGS Lost Cannon Peak 7.5 minute topographic quadrangle; 38 degrees, 27 minutes, 19.1 seconds north latitude and 119 degrees, 30 minutes, 8.4 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive days in the four months following the summer solstice; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 20 to 30 inches, includes the Bt1 horizon.

Depth to base of argillic horizon: 34 to 40 inches.

Depth to bedrock: 40 to 60 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rock.

Particle-size control section:

Clay content—Averages 12 to 18 percent.

Rock fragments—Averages 60 to 80 percent, mainly fine gravel (2 to 5 mm diameter). Lithology of fragments are granitic rocks such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—3 to 5 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Extremely stony coarse sandy loam or extremely gravelly coarse sandy loam.

Clay content—12 to 18 percent.

Rock fragments—60 to 80 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt2 horizon:

Value—5 or 6 dry, 4 or 5 moist.

Chroma—3 or 4, dry or moist.

Texture—Extremely gravelly coarse sandy loam or extremely stony coarse sandy loam.

Clay content—12 to 18 percent.

Rock fragments—60 to 80 percent.

Reaction—Slightly acid or neutral.

C horizon:

Value—6 or 7 dry, 4 or 5 moist.

Chroma—2 through 4, dry or moist.

Texture—Extremely gravelly loamy coarse sand or extremely gravelly coarse sand.

Clay content—3 to 8 percent.

Rock fragments—60 to 80 percent, dominantly fine gravel (2 to 5 mm diameter).

Reaction—Slightly acid or neutral.

Longcreek series

The Longcreek series consists of shallow, well drained soils formed in residuum and colluvium weathered from andesite and tuff breccia. Longcreek soils are on lava plateaus, hills, and mountains. Slopes range from 8 to 30 percent. The mean annual precipitation is about 13 inches, and the mean annual temperature is about 46 degrees.

Taxonomic class: Clayey-skeletal, smectitic, mesic
Lithic Argixerolls

minutes, 48.5 seconds north latitude and 119
degrees, 39 minutes, 32.5 seconds west longitude.

Typical pedon: Longcreek very stony sandy loam,
rangeland, in adjacent Douglas County. (Colors are
for dry soil unless otherwise stated.)

A1—0 to 1 inch; brown (10YR 5/3) very stony sandy
loam, very dark grayish brown (10YR 3/2) moist;
moderate medium platy structure; slightly hard, very
friable, slightly sticky and slightly plastic; common
very fine roots; many very fine interstitial pores; 10
percent stones, 10 percent cobbles, 25 percent
pebbles; slightly acid; abrupt smooth boundary.

A2—1 to 4 inches; grayish brown (10YR 5/2) very stony
sandy loam, very dark brown (10YR 2/2) moist; weak
fine subangular blocky structure; soft, very friable,
slightly sticky and slightly plastic; 25 percent stones,
10 percent cobbles, 20 percent pebbles; slightly acid;
clear wavy boundary.

Bt1—4 to 8 inches; grayish brown (10YR 5/2) very stony
clay loam, very dark grayish brown (10YR 3/2) moist;
moderate fine and medium subangular blocky
structure; slightly hard, very friable, moderately sticky
and moderately plastic; common very fine, fine,
medium and coarse roots; common very fine and fine
tubular pores; distinct discontinuous clay films on
faces of peds and lining pores; 25 percent stones, 10
percent cobbles, 20 percent pebbles; neutral; clear
wavy boundary.

Bt2—8 to 13 inches; brown (7.5YR 5/3) very stony clay
loam, dark brown (7.5YR 3/3) moist; strong angular
blocky structure; very hard, firm, very sticky and very
plastic; few very fine and fine and common medium
roots; common very fine and fine tubular pores;
distinct continuous clay films on faces of peds and
lining pores; 25 percent stones, 10 percent cobbles,
20 percent pebbles; neutral; clear wavy boundary.

Bt3—13 to 18 inches; brown (7.5YR 5/4) very stony
clay, brown (7.5YR 4/4) moist; strong medium
angular blocky structure; very hard, firm, very sticky
and very plastic; common very fine, fine and medium
roots; common very fine and fine tubular pores;
distinct continuous clay films on faces of peds and
lining pores; 25 percent stones, 10 percent cobbles,
20 percent pebbles; neutral; clear irregular boundary.

R—18 inches; hard fractured andesite, weathered in the
upper 2 inches, with some soil material and roots
between cracks and many clay film coatings on
fractures.

Type location: Douglas County, Nevada; approximately
400 feet south and 2,500 feet east of the northwest
corner of section 3, T. 10 N., R. 21 E.; 38 degrees, 45

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry from July
through October. Aridic-Xeric moisture regime.

Soil temperature: 47 to 53 degrees.

Mollic epipedon thickness: 7 to 14 inches.

Depth to lithic contact: 14 to 20 inches.

Control section:

Clay content—35 to 50 percent.

Rock fragments—35 to 55 percent, dominantly
cobbles or stones.

A horizon:

Hue—10YR or 7.5YR.

Value—4 or 5 dry.

Chroma—2 or 3.

Reaction—Slightly acid or neutral.

Bt horizons:

Hue—10YR, 7.5YR or 5YR.

Value—4 through 6 dry, 3 or 4 moist.

Chroma—2 through 4, dry or moist.

Texture—Clay, silty clay or clay loam.

Rock fragments—35 to 55 percent, dominantly
cobbles or stones

Structure—Angular blocky or prismatic.

Consistence—Hard or very hard, dry and friable or
firm, moist.

Reaction—Slightly acid or neutral.

Longday series

The Longday series consists of very deep, well drained
soils that formed in colluvium and residuum derived from
tuff, andesite, tuff-breccia, or metavolcanic rock.

Longday soils are on mountains. Slopes are 15 to 50
percent. The mean annual precipitation is about 22
inches and the mean annual temperature is about 39
degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive,
frigid Typic Argixerolls

Typical pedon: Longday extremely gravelly fine sandy
loam, rangeland, in a delineation of map unit 791.
(Colors are for dry soil unless otherwise noted.) The
soil surface is covered with 75 percent gravel and 15
percent cobbles.

A1—0 to 2 inches; grayish brown (10YR 5/2) extremely
gravelly fine sandy loam, very dark grayish brown

(10YR 3/2) moist; moderate very coarse platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine vesicular pores; 60 percent gravel; neutral; clear smooth boundary.

A2—2 to 5 inches; brown (10YR 5/3) extremely gravelly fine sandy loam, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, common fine, and few medium roots; 60 percent gravel and 5 percent cobbles; neutral; clear smooth boundary.

Bt1—5 to 13 inches; brown (10YR 5/3) extremely gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine, and few medium and coarse roots; common very fine interstitial and few fine tubular pores; few faint clay films on faces of peds, lining pores, and coating rock fragments; 55 percent gravel and 10 percent cobbles; neutral; clear smooth boundary.

Bt2—13 to 22 inches; brown (10YR 5/3) extremely gravelly sandy clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; common very fine interstitial and few fine and very fine tubular pores; common distinct clay films on faces of peds, lining pores, and coating rock fragments; 50 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.

Bt3—22 to 60 inches; pale brown (10YR 6/3) extremely gravelly sandy clay loam, brown (10YR 4/3) moist; weak medium and coarse subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; few very fine and fine roots; few very fine tubular and interstitial pores; few faint clay films on faces of peds, lining pores, and coating rock fragments; 50 percent gravel and 10 percent cobbles; neutral.

Type location: Mono County, California; on the Toiyabe National Forest in the Sweetwater Mountains about 1.7 miles east of South Sister; about 1,300 feet south and 900 feet west of the southeast corner of section 6, T. 7 N., R. 25 E.; USGS Mount Patterson 7.5 minute topographic quadrangle; 38 degrees, 29 minutes, 17.5 seconds north latitude and 119 degrees, 16 minutes, 7.1 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 60 to 80 consecutive days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 42 to 45 degrees.

Mean summer soil temperature: 59 to 62 degrees.

Mollic epipedon thickness: 10 to 16 inches; includes the Bt1 horizon.

Depth to base of argillic horizon: 45 to more than 60 inches.

Depth to bedrock: 60 to 80 inches.

Particle-size control section:

Clay content—Averages 18 to 25 percent.

Rock fragments—Averages 60 to 85 percent, mainly gravel. Lithology of rock fragments is andesite, tuff, tuff-breccia, or metavolcanic rock.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3 dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly sandy clay loam, extremely gravelly loam, or extremely gravelly sandy loam.

Clay content—18 to 25 percent.

Rock fragments—60 to 85 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt2 and Bt3 horizons:

Value—5 or 6 dry.

Chroma—3 or 4 dry or moist.

Texture—Extremely gravelly sandy clay loam, extremely gravelly loam, or extremely gravelly sandy loam.

Clay content—18 to 25 percent.

Rock fragments—60 to 85 percent.

Reaction—Slightly acid or neutral.

Loope series

The Loope series consists of shallow, well drained soils that formed in colluvium and residuum derived from tuff, tuff-breccia, and andesite. Loope soils are on mountains.

Slopes are 4 to 75 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Lithic Argixerolls

Typical pedon: Loope very gravelly sandy loam, rangeland, in a delineation of map unit 390. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 30 percent gravel, 5 percent cobbles, and less than 1 percent stones.

A—0 to 1 inch; brown (7.5YR 5/2) very gravelly sandy loam, dark brown (7.5YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; common very fine roots; common very fine tubular and interstitial pores; 50 percent gravel; neutral; clear smooth boundary.

Bt1—1 to 7 inches; brown (7.5YR 5/3) extremely gravelly sandy loam, dark brown (7.5YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine tubular and interstitial pores; few faint clay films bridging sand grains; 70 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.

Bt2—7 to 14 inches; brown (7.5YR 5/3) extremely gravelly sandy clay loam, dark brown (7.5YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine through very coarse roots; common very fine tubular and interstitial pores; common faint clay films bridging sand grains; 70 percent gravel and 5 percent cobbles; neutral; clear irregular boundary.

R—14 to 21 inches; hard fractured tuff.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.4 mile northeast of Colorado Hill; about 600 feet south and 1,350 feet east of the northwest corner of section 32, T. 10 N., R. 21 E.; USGS Heenan Lake 7.5 minute topographic quadrangle; 38 degrees, 40 minutes, 24.4 seconds north latitude and 119 degrees, 41 minutes, 53.6 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry

from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 62 to 66 degrees.

Mollic epipedon thickness: 14 to 20 inches; includes the Bt horizons.

Depth to bedrock: 14 to 20 inches to lithic contact.

Sodium fluoride pH: 8.5 to 9.0.

Particle-size control section:

Clay content—Averages 18 to 27 percent.

Rock fragments—Averages 60 to 80 percent, mainly pebbles. Lithology of fragments are; volcanic rocks such as tuff, tuff-breccia, or andesite.

A horizon:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt horizons:

Hue—10YR or 7.5YR.

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly sandy loam, extremely gravelly sandy clay loam, or extremely gravelly loam.

Clay content—18 to 27 percent.

Rock fragments—60 to 80 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Lostcannon series

The Lostcannon series consists of very deep, well drained soils that formed in colluvium derived from granodiorite. Lostcannon soils are on mountains. Slopes are 8 to 30 percent. The mean annual precipitation is about 26 inches and the mean annual temperature is about 40 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Pachic Argicryolls

Typical pedon: Lostcannon very gravelly coarse sandy loam, forestland, in a delineation of map unit 540. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 20 percent gravel, 5 percent cobbles, 5 percent stones, and 5 percent boulders.

- A1—0 to 2 inches; dark grayish brown (10YR 4/2) very gravelly coarse sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 35 percent gravel; slightly acid; clear wavy boundary.
- A2—2 to 8 inches; 60 percent brown (10YR 5/3) and 40 percent brown (10YR 4/3) very gravelly coarse sandy loam, 60 percent dark brown (10YR 3/3) and 40 percent very dark brown (10YR 2/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common very fine tubular and interstitial pores; few faint clay bridges between sand grains; 45 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.
- A3—8 to 18 inches; 60 percent brown (10YR 5/3) and 40 percent brown (10YR 4/3) very gravelly coarse sandy loam, 60 percent dark brown (10YR 3/3) and 40 percent very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, many fine, and many medium roots; common very fine tubular and interstitial pores; 45 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.
- Bt1—18 to 25 inches; brown (10YR 5/3) extremely gravelly coarse sandy loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and common fine, medium, coarse and very coarse roots; common very fine tubular and interstitial pores; few faint clay bridges between sand grains; 55 percent gravel, 5 percent cobbles, and 15 percent stones; slightly acid; clear wavy boundary.
- Bt2—25 to 36 inches; yellowish brown (10YR 5/4) extremely gravelly coarse sandy loam, dark yellowish brown (10YR 3/4) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine, common fine, common medium, common coarse, and common very coarse roots; many very fine interstitial and common fine tubular pores; few faint clay bridges between sand grains; 55 percent gravel, 5 percent cobbles, and 15 percent stones; slightly acid; clear wavy boundary.
- Bt3—36 to 60 inches; light yellowish brown (10YR 6/4) very gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and common fine, medium, coarse and very coarse roots; few distinct clay films on faces of peds and lining pores

and few 1 to 2 mm thick lamellae; 35 percent gravel and 5 percent cobbles; 10 percent paracobbles; slightly acid.

Type location: Mono County, California; on the Toiyabe National Forest about 4,000 feet northeast of Lost Cannon Peak; about 2,000 feet south and 1,150 feet east of the northwest corner of section 35, T. 7 N., R. 22 E.; USGS Lost Cannon Peak 7.5 minute topographic quadrangle; 38 degrees, 24 minutes, 37.6 seconds north latitude and 119 degrees, 32 minutes, 2.1 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 60 to 80 consecutive days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 42 to 47 degrees.

Mean summer soil temperature: 47 to 52 degrees.

Mollic epipedon thickness: 16 to 30 inches; includes the Bt1 horizon.

Depth to base of argillic horizon: 40 to more than 60 inches.

Particle-size control section:

Clay content—Averages 10 to 18 percent.

Rock fragments—Averages 60 to 80 percent, mainly fine gravel (2 to 5 mm diameter). Lithology of fragments are granitic rocks such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—3 to 5 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Clay content—10 to 18 percent.

Rock fragments—60 to 80 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt2 horizon:

Value—5 through 7 dry, 3 through 5 moist.

Chroma—3 or 4, dry or moist.

Clay content—10 to 18 percent.

Rock fragments—60 to 80 percent.

Reaction—Slightly acid or neutral.

Bt3 horizon:

Value—5 through 7 dry, 3 through 5 moist.

Chroma—3 or 4, dry or moist.

Texture—Very gravelly coarse sandy loam or extremely gravelly coarse sandy loam.

Clay content—10 to 18 percent.

Rock fragments—40 to 80 percent.

Reaction—Slightly acid or neutral.

Other features—Some pedons have few lamellae less than 0.5 cm thick.

Lostridge series

The Lostridge series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from andesitic tuff and tuff-breccia. Lostridge soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 45 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, isotic Xeric Dystrocrypts

Typical pedon: Lostridge very gravelly coarse sandy loam, forestland, in a delineation of map unit 250. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 35 percent gravel and less than 1 percent stones.

A1—0 to 3 inches; grayish brown (10YR 5/2) very gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine interstitial and tubular pores; 35 percent gravel; strongly acid; clear wavy boundary.

A2—3 to 11 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; moderate medium granular structure; soft, very friable, nonsticky and nonplastic; many fine to coarse roots; common very fine interstitial and tubular pores; 45 percent gravel; strongly acid; clear wavy boundary.

Bw—11 to 23 inches; light yellowish brown (10YR 6/4) very gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine to coarse roots; common very fine interstitial and tubular pores;

45 percent gravel; strongly acid; clear wavy boundary.

C—23 to 29 inches; light yellowish brown (10YR 6/4) very gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; common fine to coarse roots; common very fine interstitial and tubular pores; 50 percent gravel; strongly acid; clear wavy boundary.

Cr—29 inches; weathered tuff.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.75 mile northeast of The Nipple peak; about 1,400 feet south and 1,375 feet west of the northeast corner of section 7, T. 9 N., R. 19 E.; USGS Carson Pass 7.5 minute topographic quadrangle; 38 degrees, 39 minutes, 3.9 seconds north latitude and 119 degrees, 55 minutes, 47.1 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Umbric epipedon thickness: 7 to 16 inches.

Depth to bedrock: 20 to 40 inches to a paralithic contact.

The paralithic materials below the contact are weathered tuff or tuff-breccia.

Sodium fluoride pH: 10.0 to 11.5.

Control section:

Clay content—Averages 12 to 18 percent.

Rock fragments—Averages 35 to 60 percent, dominantly gravel. Lithology of fragments are; volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizons:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 10 percent.

Reaction—Very strongly acid or strongly acid.

Bw horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Very gravelly sandy loam or very gravelly coarse sandy loam.

Clay content—12 to 18 percent.

Rock fragments—35 to 60 percent.
 Structure—Weak or moderate subangular blocky.
 Reaction—Very strongly acid or strongly acid.

C horizon:

Hue—10YR or 7.5YR.
 Value—5 or 6 dry, 3 or 4 moist.
 Chroma—3 or 4 dry or moist.
 Texture—Very gravelly sandy loam or very gravelly coarse sandy loam.
 Clay content—10 to 18 percent.
 Rock fragments—35 to 60 percent.
 Pararock fragments—10 to 25 percent paragravel or parachanners.
 Reaction—Very strongly acid or strongly acid.

Lunder series

The Lunder series consists of shallow over duripan, well drained soils formed in alluvium from andesite and basalt. Lunder soils are on fan remnants. Slopes are 2 to 30 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 47 degrees.

Taxonomic class: Clayey, smectitic, mesic, shallow Abruptic Argiduridic Durixerolls

Typical pedon: Lunder very gravelly sandy loam, rangeland, in a delineation of map unit 850. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 55 percent gravel, 10 percent cobbles, 3 percent stones and 1 percent boulders.

A1—0 to 1 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; moderate medium platy structure; slightly ahrd, very friable, slightly sticky and nonplastic; few very fine roots; common very fine vesicular and few very fine interstitial pores; 55 percent gravel; neutral; abrupt wavy boundary.

A2—1 to 3 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; strong thick platy structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine roots; many very fine vesicular pores; 20 percent gravel, 5 percent cobbles; neutral; abrupt wavy boundary.

BA—3 to 7 inches; grayish brown (10YR 5/2) cobbly loam, dark brown (10YR 3/3) moist; weak thick platy parting to moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, medium and coarse

roots; common very fine tubular and interstitial pores; 10 percent gravel, 10 percent cobbles; neutral; abrupt wavy boundary.

Bt—7 to 17 inches; pale brown (10YR 6/3) cobbly clay, brown (10YR 4/3) moist; strong medium and coarse prismatic parting to strong medium angular blocky structure; very hard, very firm, very sticky and very plastic; few very fine, fine and medium roots; few very fine tubular pores; prominent pressure cutans on faces of peds; 5 percent gravel, 10 percent cobbles; neutral; clear wavy boundary.

Bqkm—17 to 33 inches; light gray (10YR 7/2) cemented material, grayish brown (10YR 5/2) moist; 1 to 4 millimeter thick laminar cap over matrix indurated by opaline silica; strong silica cementation with 1 to 4 millimeters thick discontinuous laminar cap lining fractures in lower part; slightly effervescent; moderately alkaline; clear wavy boundary.

Bqk—33 to 60 inches; pale brown (10YR 6/3) extremely cobbly sandy loam, brown (10YR 4/3) moist; massive; hard and very hard, alternately weakly and strongly silica-lime cemented layers; 30 percent gravel, 30 percent cobbles, 10 percent stones; slightly effervescent; moderately alkaline.

Type location: Mono County, California; on the Toiyabe National Forest about 1.5 miles northwest of Devils Gate; about 750 feet south and 1,950 feet west of the northeast corner of section 33, T. 7 N.; R. 25 E.; USGS Sweetwater Creek 7.5 minute topographic quadrangle; 38 degrees 25 minutes 37.9 seconds north latitude and 119 degrees 11 minutes 23.9 seconds west longitude

Range in Characteristics:

Soil moisture: Usually moist in winter and spring, dry in summer through late fall; aridic moisture regime that borders on xeric.

Mollic epipedon thickness: 7 to 10 inches.

Depth to duripan: 14 to 20 inches.

Other features: The upper part of the duripan is noneffervescent in some pedons.

Control section:

Clay content—50 to 60 percent.

Rock fragments—15 to 35 percent. Lithology of rock fragments is andesite.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3.

Reaction—Neutral or slightly alkaline.

Bt horizons:

Hue—7.5YR or 10YR.

Value—4 through 6 dry, 3 or 4 moist.

Chroma—3 through 6.

Structure—Angular or subangular blocky, or prismatic.

Reaction—Neutral or slightly alkaline.

Bqkm horizon:

Value—7 or 8 dry, 4 or 5 moist.

Chroma—2 through 4.

Structure—Strong very thick platy or is massive.

Reaction—Slightly alkaline to very strongly alkaline.

Other features—The duripan is indurated in the upper part and is either indurated or strongly cemented in the lower part.

Masonic series

The Masonic series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from andesitic tuff with surficial additions of eolian volcanic ash. Masonic soils are on mountains. Slopes are 8 to 30 percent. The mean annual precipitation is about 15 inches and the mean annual temperature is about 44 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Vitrandic Argixerolls

Typical pedon: Masonic very gravelly ashy fine sandy loam, rangeland, in a delineation of map unit 890. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 30 percent gravel, 10 percent cobbles, 5 percent stones, and 2 percent boulders.

A—0 to 4 inches; grayish brown (10YR 5/2) very gravelly ashy fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and common fine roots; many very fine interstitial and few very fine tubular pores; 35 percent gravel; slightly acid; clear wavy boundary.

Bt1—4 to 7 inches; brown (10YR 5/3) very gravelly ashy loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and common fine roots; common very fine tubular and interstitial pores; common faint clay bridges between sand grains; 50 percent gravel and 2 percent cobbles; slightly acid; clear wavy boundary.

Bt2—7 to 10 inches; brown (7.5YR 5/3) extremely gravelly ashy clay loam, dark brown (7.5YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine, common fine, and common medium roots; common very fine tubular and interstitial pores; common distinct clay films on faces of peds and lining pores; 50 percent gravel and 10 percent cobbles; slightly acid; clear wavy boundary.

2Bt3—10 to 21 inches; brown (7.5YR 5/3) extremely cobbly clay loam, dark brown (7.5YR 3/3) moist; strong fine subangular blocky structure; hard, very friable, very sticky and moderately plastic; common very fine and few fine and medium roots; common very fine tubular and interstitial pores; many distinct clay films on faces of peds and lining pores; 40 percent gravel and 30 percent cobbles; neutral; clear irregular boundary.

2Cr—21 to 29 inches; weathered andesitic tuff.

Type location: Mono County, California; on the Toiyabe National Forest about 2 miles north-northwest of Masonic Mountain; approximately 300 feet south and 100 feet west of the northeast corner of section 18, T. 6 N., R. 26 E.; USGS Bridgeport 7.5 minute topographic quadrangle; 38 degrees, 22 minutes, 28.9 seconds north latitude and 119 degrees, 09 minutes, 13.1 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive days in the four months following the summer solstice; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 20 to 30 inches; includes the Bt horizons.

Depth to bedrock: 20 to 40 inches to a paralithic contact. The paralithic materials below the contact are weathered volcanic rock such as andesitic tuff.

Particle-size control section:

Clay content—Averages 20 to 30 percent.

Rock fragments—Averages 60 to 80 percent, mainly gravel and cobbles. Lithology of rock fragments is andesitic tuff.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Volcanic glass content—35 to 60 percent in coarse silt through fine sand fractions.

Bt1 horizon:

Hue—10YR or 7.5YR.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly ashy sandy loam or very gravelly ashy loam.

Clay content—18 to 25 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Volcanic glass content—35 to 60 percent in coarse silt through fine sand fractions.

Bt2 horizon:

Hue—10YR or 7.5YR.

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly ashy loam or extremely gravelly ashy clay loam.

Clay content—25 to 35 percent.

Rock fragments—60 to 80 percent.

Organic matter content—1 or 2 percent.

Reaction—Slightly acid or neutral.

Volcanic glass content—5 to 25 percent in the coarse silt through fine sand fractions.

Oxalate Al + 1/2 oxalate iron—0.2 to 0.4 percent.

McTom series

The McTom series consists of moderately deep, somewhat excessively drained soils that formed in residuum and colluvium derived from granodiorite. McTom soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 24 inches and the mean annual temperature is about 36 degrees.

Taxonomic class: Sandy-skeletal, mixed Xeric
Dystrocryepts

Typical pedon: McTom very stony loamy coarse sand, forestland, in a delineation of map unit 710. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 5 percent cobbles, 15 percent stones, and 15 percent boulders.

Oi—0 to 2 inches; dark brown (10YR 3/3) very stony slightly decomposed plant material composed of fibrous needle litter, very dark grayish brown (10YR

3/2) moist; 15 percent cobbles, 25 percent stones, and 10 percent boulders; abrupt wavy boundary
A1—2 to 8 inches; grayish brown (10YR 5/2) extremely stony loamy coarse sand, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure parting to moderate fine granular; soft, very friable, nonsticky and nonplastic; many very fine, many fine, many medium, common coarse, and common very coarse roots; many very fine and fine interstitial pores; 20 percent gravel, 25 percent cobbles, and 25 percent stones; slightly acid; clear wavy boundary.

A2—8 to 18 inches; brown (10YR 5/3) extremely stony loamy coarse sand, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, medium, coarse, and very coarse roots; many very fine and fine tubular and interstitial pores; 25 percent gravel, 20 percent cobbles, and 25 percent stones; moderately acid; clear wavy boundary

Bw—18 to 34 inches; pale brown (10YR 6/3) extremely cobbly loamy coarse sand, brown (10YR 4/3) moist, weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, medium, coarse, and very coarse roots; many very fine tubular and interstitial pores; 30 percent gravel, 30 percent cobbles, and 3 percent stones; moderately acid; clear wavy boundary.

Cr—34 to 40 inches; weathered granodiorite.

Type location: Mono County, California; on the Toiyabe National Forest in the Sweetwater Mountains about 0.75 mile southwest of the Middle Sister; in a nonsectionized township near the projected northeast corner of section 35, T. 8 N., R. 24 E.; USGS Desert Creek Peak 7.5 minute topographic quadrangle; 38 degrees, 30 minutes, 5.2 seconds north latitude and 119 degrees, 18 minutes, 7.1 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 60 to 80 consecutive days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 35 to 40 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Umbric epipedon thickness: 10 to 20 inches.

Depth to bedrock: 20 to 40 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rock such as granodiorite.

Particle-size control section:

Clay content—Averages 3 to 8 percent.

Rock fragments—Averages 60 to 80 percent.

Lithology of fragments is granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Moderately acid or slightly acid.

Bw horizon:

Value—6 or 7 dry, 4 or 5 moist.

Chroma—3 or 4, dry or moist.

Texture—Extremely cobbly loamy coarse sand, very gravelly loamy coarse sand, or extremely stony loamy coarse sand.

Clay content—3 to 8 percent.

Rock fragments—60 to 80 percent.

Reaction—Moderately acid or slightly acid.

Meiss series

The Meiss series consists of shallow, somewhat excessively drained soils formed in residuum and colluvium weathered from andesitic rock. These soils are on mountains and have slopes of 15 to 50 percent. The mean annual precipitation is 40 to 50 inches and the mean annual temperature is 39 degrees.

Taxonomic class: Loamy, isotic Humic Lithic Dystrocrypts

Typical pedon: Meiss cobbly loam, rangeland, in the adjacent Lake Tahoe Basin. (Colors are for dry soil unless otherwise stated).

A1—0 to 6 inches; brown (10YR 5/3) cobbly loam, dark brown (10YR 3/3) moist; moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; many very fine interstitial pores; 10 percent cobbles, 20 percent pebbles; slightly acid (pH 6.5); clear smooth boundary.

A2—6 to 13 inches; yellowish brown (10YR 5/4) gravelly loam, dark yellowish brown (10YR 3/4) moist; moderate fine granular structure; slightly hard, friable, slightly sticky slightly plastic; many very fine and fine and few medium and coarse roots; many very fine interstitial pores; 5 percent cobbles, 20 percent

pebbles; medium acid (pH 6.0); abrupt wavy boundary.

R—13 inches; hard andesitic rock.

Type location: Alpine County, California; Lake Tahoe Basin; 1 mile southeast of Meiss Lake; NW 1/4, NW 1/4 sec. 10, T.10 N., R.18 E. MD, B, and M.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 40 to 45 degrees.

Mean summer soil temperature: 53 to 59 degrees.

Depth to bedrock: 10 to 20 inches to a lithic contact.

Particle-size control section:

Rock fragments—Averages 15 to 35 percent, gravel, cobbles or stones. Lithology of fragments are volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizons:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 3 moist in the upper part, 3 or 4 in the lower part.

Texture—Gravelly loam, gravelly sandy loam, or cobbly sandy loam..

Bulk Density—0.85 to 1 g/cc.

Organic matter content—1 to 4 percent.

Reaction—Moderately acid to neutral.

Monibasin series

The Monibasin series consists of very deep, well drained soils that formed in slope alluvium derived from andesite, tuff, and tuff-breccia. Monibasin soils are on mountains. Slopes are 4 to 15 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 40 degrees.

Taxonomic class: Loamy-skeletal, isotic Pachic Argicryolls

Typical pedon: Monibasin gravelly sandy loam, rangeland, in a delineation of map unit 360. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 20 percent gravel and 2 percent boulders.

A1—0 to 2 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2)

moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine interstitial pores; 20 percent gravel and 1 percent boulders; slightly acid; clear wavy boundary

A2—2 to 7 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine roots; common very fine interstitial and tubular pores; 20 percent gravel; slightly acid; clear wavy boundary.

A3—7 to 15 inches; brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine interstitial and tubular pores; 20 percent gravel; slightly acid; clear wavy boundary.

Bt1—15 to 34 inches; brown (7.5YR 5/3) extremely stony sandy loam, dark brown (7.5YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine interstitial and tubular pores; few faint clay films bridging sand grains; 20 percent gravel, 5 percent cobbles, and 50 percent stones; neutral; clear wavy boundary.

Bt2—34 to 60 inches; 90 percent pale brown (10YR 6/3) and 10 percent brown (7.5YR 5/3) very stony sandy loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine interstitial and tubular pores; few faint clay films bridging sand grains; 20 percent gravel, 10 percent cobbles, and 10 percent stones; neutral.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.5 mile west of Monitor Pass; about 1,000 feet south and about 900 feet east of the northwest corner of section 36, T. 10 N., R. 21 E.; USGS Heenan Lake 7.5 minute topographic quadrangle; 38 degrees, 40 minutes, 26.4 seconds north latitude and 119 degrees, 37 minutes, 43.2 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 52 to 59 degrees.

Mollic epipedon thickness: 26 to 36 inches, includes the Bt1 horizon.

Depth to base of argillic horizon: More than 60 inches.

Sodium fluoride pH: 8.5 to 9.0.

Particle-size control section:

Clay content—Averages 18 to 25 percent.

Rock fragments—Averages 60 to 80 percent.

Lithology of fragments are volcanic rocks such as tuff, tuff-breccia, or andesite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Hue—10YR or 7.5YR.

Texture—Extremely stony sandy loam or extremely stony sandy clay loam.

Clay content—18 to 25 percent.

Rock fragments—60 to 80 percent, dominantly stones.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt2 horizon:

Hue—10YR or 7.5YR.

Texture—Extremely stony sandy loam or very stony sandy clay loam.

Clay content—18 to 25 percent.

Rock fragments—35 to 80 percent, dominantly stones.

Reaction—Slightly acid or neutral.

Mopana series

The Mopana series consists of shallow to a duripan, well drained soils that formed in aeolian material derived from volcanic ash over residuum derived from basalt. Mopana soils are on plateaus. Slopes are 0 to 8 percent. The mean annual precipitation is about 13 inches and the mean annual temperature is 42 degrees.

Taxonomic class: Clayey, smectitic, frigid, shallow Vitritorrandic Durixerolls

Typical pedon: Mopana very gravelly ashy fine sandy loam, rangeland, in a delineation of map unit 880. (Colors are for dry soil unless otherwise noted.) The

soil surface is covered with 4 percent stones, 20 percent cobbles, and 70 percent gravel.

north latitude and 119 degrees, 02 minutes, 14.9 seconds west longitude.

A1—0 to 3 inches; grayish brown (10YR 5/2) very gravelly ashy fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 40 percent gravel, 15 percent cobbles; slightly acid; clear wavy boundary.

A2—3 to 5 inches; grayish brown (10YR 5/2) gravelly ashy fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial and few fine tubular pores; 15 percent gravel; neutral; clear wavy boundary.

BAt—5 to 9 inches; grayish brown (10YR 5/2) gravelly ashy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine tubular and interstitial pores; common faint clay films coating ped faces and lining pores; 15 percent gravel; neutral; abrupt smooth boundary.

2Bt—9 to 15 inches; brown (7.5YR 5/4) clay, dark brown (7.5YR 3/4) moist; strong fine prismatic parting to strong fine and medium angular blocky structure; extremely hard, very firm, very sticky and very plastic; few very fine, fine and medium roots; few very fine tubular pores; prominent pressure cutans on faces of peds; 10 percent gravel; neutral; clear wavy boundary.

2Btqk—15 to 19 inches; light brown (7.5YR 6/4) very gravelly clay loam, brown (7.5YR 4/4) moist; strong fine and medium subangular blocky structure; hard, friable, very sticky and very plastic; few very fine and fine roots; many distinct pressure cutans on faces of peds; 20 percent strongly cemented flat pan fragments; 35 percent gravel; moderately alkaline; abrupt wavy boundary.

2Bqkm—19 to 60 inches; cemented material; 1 to 4 millimeter thick laminar cap over matrix indurated by opaline silica; strong silica cementation with 1 to 4 millimeters thick discontinuous laminar cap lining fractures in lower part; strongly effervescent.

Type location: Mono County, California; on the Toiyabe National Forest about 5 ½ miles southeast of Masonic Mountain; about 950 feet north and 1,500 feet east of the southwest corner of section 32, T. 6 N.; R. 27 E.; USGS Dome Hill 7.5 minute topographic quadrangle; 38 degrees, 19 minutes, 13.6 seconds

Range in Characteristics:

Soil moisture: Usually moist in winter, spring, and early summer; dry summer and fall, but intermittently moist in some part above the moisture control section due to summer convection storms; Dry in all parts more than 45 consecutive days following the summer solstice; aridic moisture regime that borders on xeric.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 7 to 10 inches, includes the BAt horizon.

Depth to base of argillic horizon: 14 to 20 inches.

Depth to duripan: 14 to 20 inches.

Depth to bedrock: More than 60 inches.

Particle-size control section:

Clay content—35 to 50 percent.

Rock fragments—0 to 25 percent, dominantly pebbles. Lithology of fragments are volcanic rocks such as basalt or strongly cemented to indurated detached duripan fragments.

Other features—An abrupt horizon boundary is normally present between the BAt horizon and the Bt horizon accompanied by an increase in clay content of more than 15 percent.

A horizon:

Chroma—2 or 3, dry or moist.

Clay content—10 to 15 percent.

Organic matter content—1 to 3 percent.

Volcanic glass content—30 to 60 percent in coarse silt through fine sand fractions.

BAt horizon:

Chroma—2 or 3, dry or moist.

Clay content—18 to 27 percent.

Organic matter content—1 or 2 percent.

Volcanic glass content—30 to 60 percent in coarse silt through fine sand fractions.

2Bt horizon:

Value—5 or 6 dry, 3 or 4 moist.

Texture—Clay or gravelly clay loam.

Clay content—35 to 50 percent.

Rock fragments—0 to 25 percent, mainly pebbles.

Reaction—Neutral or slightly alkaline.

Other features—Sodium adsorption ratio is less than 5 in this horizon.

2Btqk horizon:

Texture—Gravelly clay loam or very gravelly clay loam.

Clay content—35 to 40 percent.

Rock fragments—15 to 60 percent, mainly pebbles.

2Bqkm horizon:

Cementation—1 to 4 millimeters thick continuous laminar cap of silica on upper surface of indurated matrix; strongly silica cemented plates with discontinuous 1 to 2 millimeters thick laminar cap lining fractures below.

Morscour series

The Morscour series consists of very shallow, well drained soils that formed mainly in residuum derived from tuff, tuff-breccia, and andesite. Morscour soils are on mountains. Slopes are 8 to 30 percent. The mean annual precipitation is about 45 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, shallow Xeric Haplocryolls

Typical pedon: Morscour extremely gravelly sandy loam, rangeland, in a delineation of map unit 171. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 35 percent gravel, 10 percent cobbles, 5 percent stones, and 5 percent boulders.

A1—0 to 2 inches; grayish brown (10YR 5/2) extremely gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine interstitial and tubular pores; 50 percent gravel, 5 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

A2—2 to 7 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and common fine roots; common very fine interstitial and tubular pores; 50 percent gravel and 5 percent cobbles; 20 percent paragravel; slightly acid; clear irregular boundary.

Cr—7 to 14 inches; weathered fractured tuff.

R—14 inches; hard tuff.

Type location: Alpine County, California; on the Toiyabe National Forest about 1.7 miles southeast of Red Lake; about 550 feet north and 2,350 feet east of the southwest corner of section 25, T. 10 N., R. 18 E.; USGS Carson Pass 7.5 minute topographic

quadrangle; 38 degrees, 40 minutes, 38.5 seconds north latitude and 119 degrees, 57 minutes, 13.1 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 54 to 59 degrees.

Mollic epipedon thickness: 4 to 10 inches.

Depth to bedrock: 4 to 10 inches to a paralithic contact.

The paralithic materials below the contact are weathered tuff or tuff-breccia.

Sodium fluoride pH: 8.5 to 10.0.

Particle-size control section:

Clay content—Averages 12 to 18 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel. Lithology of fragments are volcanic rocks such as tuff and granitic rocks such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Clay content—12 to 18 percent.

Rock fragments—35 to 60 percent.

Pararock fragments—0 to 25 percent paragravel.

Organic matter content—2 to 4 percent.

Reaction—Moderately acid to neutral.

Mottskel series

The Mottskel series consists of very deep, excessively drained soils that formed in alluvium derived from granitic rocks. Mottskel soils are on alluvial fans. Slopes are 4 to 15 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 49 degrees.

Taxonomic class: Sandy-skeletal, mixed, mesic Torriorthentic Haploxerolls

Typical pedon: Mottskel very bouldery loamy coarse sand, rangeland, in adjacent Douglas County. (Colors are for dry soil unless otherwise noted.)

A1—0 to 8 inches; dark grayish brown (10YR 4/2) very bouldery loamy coarse sand, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure;

soft, very friable, nonsticky and nonplastic; common very fine and common fine roots; many fine interstitial pores; 20 percent boulders and 30 percent pebbles; slightly acid (pH 6.3); clear smooth boundary.

A2—8 to 18 inches; dark grayish brown (10YR 4/2) very bouldery loamy coarse sand, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, common fine, and common medium roots; many fine interstitial pores; 15 percent boulders and 25 percent pebbles; slightly acid (pH 6.4); clear wavy boundary.

C1—18 to 30 inches; grayish brown (10YR 5/2) very stony loamy coarse sand, very dark grayish brown (10YR 3/2) moist; massive, soft, very friable, nonsticky and nonplastic; few very fine, common fine, and common medium roots; many fine interstitial pores; 25 percent stones and 25 percent pebbles; slightly acid (pH 6.5); gradual wavy boundary.

C2—30 to 60 inches; light brownish gray (10YR 6/2) very stony loamy coarse sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, few fine, and common medium roots; many fine interstitial pores; 25 percent stones and 25 percent pebbles; neutral (pH 6.6).

Type location: Douglas County, Nevada; between the Carson Range and Carson Valley north of Luther Creek; about 550 feet south and 950 feet east of the northwest corner of section 36, T. 12 N., R. 19 E.; USGS Woodfords 7.5 minute topographic quadrangle; 38 degrees, 51 minutes, 55.5 seconds north latitude and 119 degrees, 48 minutes, 09 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually dry in the moisture control section, moist in winter and spring, dry in summer and fall; aridic moisture regime that borders on xeric.

Mean annual soil temperature: 48 to 53 degrees.

Mollic epipedon thickness: 10 to 20 inches.

Control section:

Clay content—3 to 10 percent.

Rock fragments—35 to 60 percent, about half of which are stones or boulders and half are fine pebbles. Lithology of fragments are granitic rocks such as granite and granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

C horizons:

Value—5 or 6 dry, 3 through 5 moist.

Chroma—2 or 3, dry or moist.

Texture—Very bouldery loamy coarse sand, very stony loamy coarse sand, very bouldery coarse sand, or very stony coarse sand.

Rock fragments—35 to 60 percent.

Organic matter content—0.25 to 0.6 percent.

Reaction—Slightly acid or neutral.

Mountpatterson series

The Mountpatterson series consists of shallow, well drained soils that formed in volcanic ash and in residuum and colluvium derived from andesite, tuff, and metavolcanic rock. Mountpatterson soils are on mountains. Slopes are 4 to 30 percent. The mean annual precipitation is about 24 inches and the mean annual temperature is about 36 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Lithic Argicryolls

Typical pedon: Mountpatterson extremely gravelly ashy sandy loam, rangeland, in a delineation of map unit 680. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 5 percent channers, 30 percent cobbles, and 20 percent stones.

A1—0 to 2 inches; very dark grayish brown (10YR 3/2) extremely gravelly ashy sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; many very fine interstitial pores; 40 percent gravel, 20 percent cobbles, and 1 percent stones; neutral; clear smooth boundary.

A2—2 to 9 inches; dark grayish brown (10YR 4/2) extremely gravelly ashy sandy loam, dark brown

(10YR 3/3) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, common fine and few medium roots; many very fine and fine interstitial pores; 50 percent gravel and 15 percent cobbles; slightly acid; clear wavy boundary.

Bt—9 to 18 inches; dark grayish brown (10YR 4/2) extremely gravelly ashy loam, dark brown (10YR 3/3) moist; weak moderate subangular blocky structure;

soft, very friable, slightly sticky and slightly plastic; common very fine and fine, and few medium roots; common very fine and fine interstitial pores; few distinct clay films on faces of peds, lining pores, and coating rock fragments; 60 percent gravel and 15 percent cobbles; slightly acid; abrupt wavy boundary. R—18 inches; fractured metavolcanic rock.

Type location: Mono County, California; on the Toiyabe National Forest in the Sweetwater Mountains between Mount Patterson and Wheeler Peak; in the nonsectionized township T. 7 N., R. 24 E.; USGS Mount Patterson 7.5 minute topographic quadrangle; 38 degrees, 25 minutes, 37.2 seconds north latitude and 119 degrees, 17 minutes, 55.0 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 60 to 80 consecutive days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 47 to 54 degrees.

Mollic epipedon thickness: 14 to 20 inches; includes the Bt horizon.

Depth to base of argillic horizon: 14 to 20 inches.

Depth to bedrock: 14 to 20 inches to a lithic contact.

Particle-size control section:

Clay content—Averages 18 to 27 percent.

Rock fragments—Averages 60 to 85 percent, mainly gravel. Lithology of rock fragments are volcanic rock such as andesite and tuff or metavolcanic rock.

Volcanic glass content—15 to 30 percent in coarse silt through fine sand fractions.

Oxalate Al + 1/2 oxalate iron—0.2 to 0.4 percent.

A horizons:

Value—3 through 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt horizon:

Value—4 or 5 dry.

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly ashy loam or extremely gravelly ashy sandy clay loam.

Clay content—18 to 27 percent.

Rock fragments—60 to 85 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Murain series

The Murain series consists of very deep, well drained soils that formed in till derived from igneous and metamorphic rocks. Murain soils are on moraines. Slopes are 4 to 50 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Pachic Argixerolls

Typical pedon: Murain extremely stony coarse sandy loam, rangeland, in a delineation of map unit 581. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 5 percent cobbles, 5 percent stones, and 5 percent boulders.

A1—0 to 2 inches; dark grayish brown (10YR 4/2) extremely stony coarse sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 30 percent gravel, 15 percent cobbles, and 30 percent stones; slightly acid; clear wavy boundary.

A2—2 to 7 inches; very dark grayish brown (10YR 3/2) extremely cobbly coarse sandy loam, very dark brown (10YR 2/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; common very fine tubular and interstitial pores; 25 percent gravel, 30 percent cobbles, and 20 percent stones; slightly acid; clear wavy boundary.

Bt—7 to 18 inches; dark grayish brown (10YR 4/2) extremely cobbly coarse sandy loam, very dark brown (10YR 2/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine tubular and interstitial pores; few faint clay bridges between sand grains; 25 percent gravel, 30 percent cobbles, 20 percent stones; slightly acid; clear wavy boundary.

Btq1—18 to 26 inches; brown (10YR 5/3) extremely stony sandy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; few very

fine tubular and interstitial pores; 30 percent of peds are brittle due to silica accumulation; common faint clay bridges between sand grains and few distinct clay films on faces of peds and lining pores; 20 percent gravel, 20 percent cobbles, and 30 percent stones; slightly acid; clear wavy boundary.

Btq2—26 to 41 inches; pale brown (10YR 6/3) extremely stony sandy clay loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine tubular and interstitial pores; 30 percent of peds are brittle due to silica accumulation; common distinct clay films on faces of peds and lining pores; 20 percent gravel, 20 percent cobbles, and 30 percent stones; slightly acid; clear wavy boundary.

BCt—41 to 60 inches; pale brown (10YR 6/3) extremely cobbly sandy loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine, fine, medium and coarse roots; few very fine tubular and interstitial pores; few faint clay coats on sand grains; 25 percent gravel, 30 percent cobbles, 10 percent stones; slightly acid.

Type location: Mono County, California; on the Toiyabe National Forest about 0.75 mile west of the USMC Mountain Warfare School; about 200 feet north and 2,150 feet west of the southeast corner of section 14, T. 6 N., R. 22 E.; USGS Pickel Meadow 7.5 minute topographic quadrangle; 38 degrees, 21 minutes, 37.3 seconds north latitude and 119 degrees, 31 minutes, 36.9 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive days in the four months following the summer solstice; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 20 to 30 inches, includes the Bt and Btq1 horizons.

Depth to base of argillic horizon: 40 to more than 60 inches.

Particle-size control section:

Clay content—Averages 18 to 25 percent.

Rock fragments—Averages 60 to 80 percent, mainly stones and cobbles. Lithology of fragments are

mixed igneous and metamorphic rocks such as granodiorite, andesite, schist, or gneiss.

A1 and A2 horizons:

Value—3 through 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—3 to 5 percent.

Reaction—Slightly acid or neutral.

Bt horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Extremely stony coarse sandy loam, extremely stony sandy clay loam, or extremely cobbly coarse sandy loam.

Clay content—15 to 25 percent.

Rock fragments—60 to 80 percent.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Btq1 horizon:

Value—4 or 5 dry.

Chroma—2 or 3, dry or moist.

Texture—Extremely stony sandy clay loam, extremely cobbly sandy clay loam, or extremely gravelly sandy clay loam.

Clay content—20 to 25 percent.

Rock fragments—60 to 80 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Secondary silica—20 to 50 percent of peds have a brittle manner of failure due to silica accumulation.

Btq2 horizon:

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Extremely stony sandy loam, extremely cobbly sandy loam, or extremely gravelly sandy loam.

Clay content—18 to 25 percent.

Rock fragments—60 to 80 percent.

Reaction—Slightly acid or neutral.

Secondary silica—20 to 50 percent of peds have a brittle manner of failure due to silica accumulation.

BCt horizon:

Value—4 or 5 moist.

Chroma—3 or 4, dry or moist.

Texture—Extremely stony coarse sandy loam or extremely cobbly sandy loam, or extremely gravelly sandy clay loam.

Clay content—18 to 25 percent.

Rock fragments—60 to 80 percent.

Reaction—Slightly acid or neutral.

Newcone series

The Newcone series consists of very shallow, well drained soils that formed in colluvium and residuum derived from hydrothermally altered volcanic rock. Newcone soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, isotic, acid, frigid, shallow Dystric Xerorthents

Typical pedon: Newcone very gravelly sandy loam, forestland, in a delineation of map unit 430. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 45 percent gravel, 2 percent cobbles, and less than 1 percent stones.

A—0 to 1 inch; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine interstitial pores; 40 percent gravel; 5 percent paragravel; strongly acid; clear wavy boundary.

AC—to 6 inches; pale brown (10YR 6/3) very gravelly loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine through medium roots; common very fine tubular and interstitial pores; 50 percent gravel; 10 percent paragravel; strongly acid.

Cr—6 to 20 inches; weathered and fractured hydrothermally altered tuff; few roots and fine-earth in fractures; very strongly acid.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.3 mile northwest of the abandoned mining town of Loope; about 2,000 feet north and 1,250 feet east of the southwest corner of section 32, T. 10 N., R. 21 E.; USGS Heenan Lake 7.5 minute topographic quadrangle; 38 degrees, 40 minutes, 02.1 seconds north latitude and 119 degrees, 41 minutes, 53.8 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section in late fall, winter, and spring; usually dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Ochric epipedon thickness: 1 to 3 inches.

Depth to bedrock: 4 to 10 inches to a paralithic contact.

The paralithic materials below the contact are weathered volcanic rocks such as andesitic tuff.

Sodium fluoride pH: 8.5 to 9.0.

Particle-size control section:

Clay content—Averages 12 to 18 percent.

Rock fragments—Averages 35 to 60 percent, mainly pebbles. Lithology of rock fragments are hydrothermally altered volcanic rocks such as andesitic tuff.

A and AC horizons:

Hue—7.5YR through 2.5Y.

Value—5 through 7 dry, 4 or 5 moist.

Chroma—2 through 6, dry or moist.

Texture—Very gravelly sandy loam or very gravelly loam.

Rock fragments—35 to 50 percent, mainly gravel.

Clay content—12 to 18 percent.

Reaction—Extremely acid, very strongly acid, or strongly acid.

Base saturation—Less than 60 percent in the AC horizon.

Nohelp series

The Nohelp series consists of very deep, well drained soils that formed in alluvium derived from volcanic and metavolcanic rocks. Nohelp soils are on fan remnants. Slopes are 4 to 30 percent. The mean annual precipitation is about 15 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Clayey-skeletal, smectitic, frigid Vitrandic Palexerolls

Typical pedon: Nohelp gravelly ashy sandy loam, rangeland, in a delineation of map unit 720. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 15 percent gravel and 5 percent cobbles.

A—0 to 4 inches; dark brown (7.5YR 3/2) gravelly ashy sandy loam, very dark brown (7.5YR 2.5/2) moist; weak medium platy structure parting to moderate fine granular; soft, very friable, slightly sticky and nonplastic; many very fine and few fine roots; many very fine interstitial pores; 20 percent gravel; slightly acid; clear smooth boundary.

AB—4 to 11 inches; dark brown (7.5YR 3/2) gravelly ashy sandy loam, very dark brown (7.5YR 2.5/2) moist; moderate medium subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine, common fine and few medium roots; common very fine interstitial and few very fine tubular pores; 20 percent gravel and 5 percent cobbles; slightly acid; clear smooth boundary.

Bt1—11 to 21 inches; brown (7.5YR 4/2) very gravelly clay loam, dark brown (7.5YR 3/3) moist; moderate medium angular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine and few fine, medium and coarse roots; few very fine tubular pores; many distinct clay films on faces of peds, lining pores, and coating rock fragments; 40 percent gravel and 15 percent cobbles; neutral; clear wavy boundary.

Bt2—21 to 32 inches; brown (7.5YR 5/3) extremely cobbly clay loam, brown (7.5YR 4/3) moist; weak coarse subangular blocky structure parting to moderate medium angular blocky; hard, firm, moderately sticky and moderately plastic; few very fine, fine, medium, and coarse roots; few very fine tubular pores; common distinct clay films on faces of peds, lining pores, and coating rock fragments; 40 percent gravel and 22 percent cobbles; slightly acid; clear wavy boundary.

Bt3—32 to 60 inches; brown (7.5YR 5/3) extremely gravelly clay loam, brown (7.5YR 4/3) moist; weak medium and coarse subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few medium roots; few very fine tubular pores; common distinct clay films on faces of peds, lining pores, and coating rock fragments; 45 percent gravel and 15 percent cobbles; slightly acid.

Type location: Mono County, California; on the Toiyabe National Forest east of the Sweetwater Mountains on Wedertz Flat; in a nonsectionized township near the projected center of section 10, T. 6 N., R. 25 E.; USGS Sweetwater Creek 7.5 minute topographic quadrangle; 38 degrees, 22 minutes, 56.9 seconds north latitude and 119 degrees, 13 minutes, 1.7 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive days in the four months following the summer solstice; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 20 to 30 inches; includes the Bt1 horizon.

Depth to base of argillic horizon: More than 60 inches.

Particle-size control section:

Clay content—Averages 35 to 45 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel and cobbles. Lithology of fragments are volcanic rocks such as andesite, tuff, and tuff-breccia or metavolcanic rocks.

A and AB horizons:

Hue—7.5YR or 10YR.

Value—3 through 5 dry, 2, 2.5, or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Hue—7.5YR or 10YR.

Value—4 or 5 dry.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly clay loam or very cobbly clay.

Clay content—35 to 45 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt2 and Bt3 horizons:

Hue—7.5YR or 10YR.

Value—5 or 6 dry, 4 or 5 moist.

Chroma—3 or 4, dry or moist.

Texture—Extremely cobbly clay loam, extremely gravelly clay loam, or very gravelly clay.

Clay content—35 to 45 percent.

Rock fragments—50 to 80 percent.

Reaction—Slightly acid or neutral.

Nosrac series

The Nosrac series consists of very deep, well drained soils that formed in colluvium and residuum from andesite and schist. The Nosrac soils are on hills and mountains and have slopes are 15 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 46 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Aridic Argixerolls

Typical pedon: Nosrac gravelly clay loam, rangeland, in adjacent Douglas County. (Colors are for dry soil unless otherwise noted.)

A1—0 to 8 inches; dark grayish brown (10YR 4/2) gravelly loam, very dark brown (10YR 2/2) moist; strong fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and common fine and few medium roots; many very fine interstitial pores; 25 percent gravel, 1 percent stones; neutral; clear smooth boundary

A2—8 to 14 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, common fine and medium and few coarse roots; many very fine and fine tubular pores; 45 percent gravel, 10 percent cobbles; neutral; clear wavy boundary.

Bt1—14 to 35 inches; brown (10YR 5/3) very gravelly clay loam, dark brown (10YR 4/3) moist; strong medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common very fine and few fine and medium roots; many very fine and few fine tubular pores; many faint clay films coating ped faces and lining pores; 35 percent gravel, 10 percent cobbles; neutral; clear wavy boundary.

Bt2—35 to 45 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 4/3) moist; strong medium subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; few very fine and fine roots; common very fine and few fine tubular pores; common faint clay films coating ped faces and lining pores; 30 percent gravel, 10 percent cobbles; neutral; clear wavy boundary.

Bt3—45 to 60 inches; very pale brown (10YR 7/3) gravelly loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, moderately sticky and slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; few faint clay films lining pores; 20 percent pebbles, 10 percent cobbles; neutral.

Type location: Douglas County, Nevada; about 2 miles north of Bismark Peak; approximately 1,500 feet west and 500 feet south of the northeast corner of section 2, T. 14 N., R. 21 E.; USGS Mineral Peak 7.5 minute topographic quadrangle; 39 degrees, 06 minutes, 46 seconds north latitude and 119 degrees, 35 minutes, 16 seconds west longitude. NAD 27.

Range in Characteristics:

Soil moisture: Usually moist in winter and spring, dry in summer through late fall; aridic moisture regime that borders on xeric.

Soil temperature: 47 to 50 degrees.

Mollic epipedon thickness: 14 to 20 inches.

Depth to bedrock: 60 to 80 inches.

Particle-size control section:

Percent clay—Averages 25 to 35 percent.

Rock fragments—Averages 35 to 60 percent, dominantly gravel. Lithology of fragments are volcanic rocks such as andesite or metamorphic rocks such as schist.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—1 through 3 dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3 dry or moist.

Structure—Weak to strong fine to coarse subangular blocky or it is massive.

Texture—Very gravelly loam or very gravelly clay loam.

Clay content—25 to 35 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt2 and Bt3 horizons:

Hue—10YR, 2.5Y or 5Y.

Value—5 through 7 dry, 4 or 5 moist.

Chroma—3 or 4 dry or moist.

Structure—Weak to strong fine to coarse subangular blocky or it is massive.

Texture—Very gravelly loam or very gravelly clay loam.

Clay content—25 to 35 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Ocashe series

The Ocashe series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks with surficial additions of eolian volcanic ash. Ocashe soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 13 inches and the mean annual temperature is about 44 degrees.

Taxonomic class: Ashy-skeletal, glassy, mesic Lithic Argixerolls

Typical pedon: Ocashe extremely gravelly ashy sandy loam, forestland, in a delineation of map unit 860.

(Colors are for dry soil unless otherwise noted.) The soil surface is covered with 40 percent gravel, 5 percent cobbles, and 5 percent stones.

- A1—0 to 1 inch; grayish brown (10YR 5/2) extremely gravelly ashy sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 60 percent gravel; slightly acid; clear wavy boundary.
- A2—1 to 3 inches; brown (10YR 5/3) extremely gravelly ashy sandy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and common fine roots; common very fine and fine interstitial and tubular pores; 60 percent gravel; neutral; clear wavy boundary.
- Bt1—3 to 7 inches; brown (10YR 5/3) extremely gravelly ashy sandy loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; common very fine, common fine, and common medium roots; common very fine tubular and interstitial pores; 60 percent gravel; common faint clay bridges on sand grains; slightly acid; clear irregular boundary.
- Bt2—7 to 13 inches; pale brown (10YR 6/3) extremely gravelly ashy sandy clay loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; few very fine roots; common very fine tubular and interstitial pores; common faint clay bridges on sand grains; 65 percent gravel; neutral; clear irregular boundary.
- R—13 inches; hard fractured altered volcanic rock.

Type location: Mono County, California; on the Toiyabe National Forest about 2.5 miles southwest of Devils Gate; about 900 feet south and 1,700 feet west of the northeast corner of section 11, T. 6 N., R. 25 E.; USGS Sweetwater Creek 7.5 minute topographic quadrangle; 38 degrees, 23 minutes, 14.7 seconds north latitude and 119 degrees, 11 minutes, 34.0 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in winter and spring, dry from July through October; Aridic moisture regime that borders on xeric.

Mean annual soil temperature: 47 to 50 degrees.

Mollic epipedon thickness: 7 to 12 inches; includes part or all of the argillic horizon.

Depth to bedrock: 7 to 14 inches to a lithic contact.

Volcanic glass content: 35 to 60 percent in coarse silt through fine sand fractions.

Control section:

Clay content—Averages 15 to 25 percent.

Rock fragments—Averages 60 to 80 percent, mainly gravel. Lithology of fragments is volcanic rock such as andesite or tuff.

A horizons:

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Hue—10YR or 7.5YR.

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly ashy sandy clay loam, extremely gravelly ashy loam, or extremely gravelly ashy sandy loam.

Clay content—18 to 27 percent.

Rock fragments—60 to 80 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt2 horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly ashy sandy clay loam, extremely gravelly ashy loam, or extremely gravelly ashy sandy loam.

Clay content—18 to 27 percent.

Rock fragments—60 to 80 percent.

Organic matter content—0.5 to 2 percent.

Reaction—Slightly acid or neutral.

Oest series

The Oest series consists of very deep, well drained soils that formed in mixed alluvium. The Oest soils are located on terraces and terrace side slopes. Slopes are 2 to 8 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 50 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Aridic Argixerolls

Typical pedon: Oest bouldery sandy loam, rangeland, in a delineation of map unit 330. (Colors are for dry soil unless otherwise noted). The soil surface is covered with 20 percent gravel, 5 percent cobbles, 1 percent stones and 1 percent boulders.

Al—0 to 4 inches; grayish brown (10YR 5/2) very bouldery sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and common fine roots; common very fine tubular and interstitial pores; 25 percent pebbles, 10 percent cobbles, 10 percent stones, 5 percent boulders; slightly acid; clear wavy boundary.

A2—4 to 10 inches; brown (10YR 5/3) very bouldery sandy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular and interstitial pores; 25 percent pebbles, 10 percent cobbles, 10 percent stones, 10 percent boulders; slightly acid; clear wavy boundary.

Bt1—10 to 20 inches; light yellowish brown (10YR 6/4) very bouldery sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; very hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular and interstitial pores; common faint clay films bridging sand grains; 25 percent pebbles, 10 percent cobbles; 10 percent stones, 10 percent boulders; slightly acid; clear wavy boundary.

Bt2—20 to 32 inches; light yellowish brown (10YR 6/4) very bouldery sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; very hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular and interstitial pores; common faint discontinuous clay films bridging sand grains; 25 percent pebbles, 10 percent cobbles, 10 percent stones, 10 percent boulders; slightly acid; clear wavy boundary.

Bt3—32 to 60 inches; light yellowish brown (10YR 6/4) very bouldery sandy loam, dark yellowish brown (10YR 4/4) moist; massive; hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine interstitial pores; common faint discontinuous clay films bridging sand grains; 25 percent pebbles, 10 percent cobbles, 10 percent stones, 10 percent boulders; slightly acid.

Type location: Alpine County, California; approximately 1,425 feet south and 90 feet west of the northeast corner of section 26, T. 11 N., R. 19 E.; 38 degrees, 47 minutes, 26.7 seconds north latitude and 119

degrees, 48 minutes, 22 seconds west longitude; NAD 27.

Range in Characteristics:

Soil moisture: Usually dry in the moisture control section, moist in winter and spring, dry in summer and fall; aridic moisture regime that borders on xeric.

Mean annual soil temperature: 47 to 52 degrees.

Mollic epipedon thickness: 10 to 18 inches.

Control section:

Clay content—18 to 25 percent.

Rock fragments—35 to 60 percent.

A horizon:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3 dry or moist.

Reaction—Slightly acid or neutral.

Organic matter content—1 to 3 percent.

Bt horizons:

Hue: 10YR, 7.5YR or 5YR.

Value—4, 5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4 dry or moist.

Texture—Sandy loam or sandy clay loam.

Clay content—18 to 25 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Olac series

The Olac series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Olac soils are on hills, mountains, and plateaus. Slopes are 15 to 50 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 48 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Lithic Xeric Haplargids

Typical pedon: Olac very stony loam, rangeland, in adjacent Douglas County. (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches; brown (10YR 5/3) very stony loam, dark brown (10YR 3/3) moist; strong very fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; few very fine tubular pores; 30 percent pebbles, 20 percent

stones; slightly alkaline (pH 7.6); abrupt smooth boundary.

A2—2 to 3 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; strong thick platy structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine roots; many very fine vesicular pores; 35 percent pebbles; slightly alkaline (pH 7.6); abrupt wavy boundary.

Bt—3 to 10 inches; very pale brown (10YR 7/3) extremely gravelly loam, brown (10YR 4/3) moist; weak coarse subangular blocky structure; slightly hard, firm, moderately sticky and moderately plastic; few very fine, fine and medium roots; few faint clay films on faces of peds and lining pores; 60 percent pebbles; slightly alkaline (pH 7.6); abrupt irregular boundary.

R—10 inches; fractured andesite.

Type location: Douglas County, Nevada; about 2 miles southwest of Wellington; 1,300 feet south and 400 feet west of northeast corner section 13, T. 10 N., R. 23 E.; USGS Long Dry Canyon 7.5 minute topographic quadrangle; 38 degrees, 43 minutes, 57 seconds north latitude and 119 degrees, 21 minutes, 00 seconds west longitude; NAD27.

Range in Characteristics:

Soil moisture: Usually dry summer and fall, moist

November through early June; aridic moisture regime that borders on xeric.

Soil temperature: 47 to 52 degrees.

Depth to bedrock: 8 to 14 inches to a lithic contact.

Reaction: Slightly acid to slightly alkaline.

Control section:

Clay content—18 to 27 percent.

Rock fragments—35 to 65 percent, mainly angular pebbles with 0 to 30 percent cobbles or stones in the upper part. Lithology of fragments are volcanic rocks such as andesite, basalt, and rhyolite.

A horizons:

Value—5 or 6 dry, 3 or 4 moist.

Chroma—2 or 3, dry or moist.

Rock fragments—20 to 65 percent.

Bt horizons:

Hue—7.5YR or 10YR.

Value—4 through 7 dry, 3 or 4 moist.

Chroma—2 through 4, dry or moist.

Texture—Extremely gravelly loam or extremely gravelly clay loam.

Consistence—Friable or firm; slightly sticky or moderately sticky and slightly plastic or moderately plastic.

Clay content—23 to 30 percent.

Rock fragments—60 to 75 percent, mainly pebbles.

Pernty series

The Pernty series consists of shallow, well drained soils that formed in residuum and colluvium derived from rhyolite and chert. Pernty soils are on mountains and hills. Slopes are 8 to 30 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 43 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Lithic Argixerolls

Typical pedon: Pernty very stony loam, rangeland, in adjacent Douglas County. (Colors are for dry soil unless otherwise noted.)

A—0 to 5 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine tubular pores; 45 percent pebbles, 5 percent cobbles; neutral; clear wavy boundary.

Bt1—5 to 11 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; many very fine and fine and common medium roots; common very fine tubular pores; common faint discontinuous clay films on faces of peds; 45 percent pebbles, 5 percent cobbles; neutral; abrupt wavy boundary.

Bt2—11 to 15 inches; brown (10YR 5/3) very gravelly loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; many very fine and fine and common medium roots; common very fine tubular pores; common faint discontinuous clay films on faces of peds; 45 percent pebbles, 5 percent cobbles; neutral; abrupt irregular boundary.

R—15 inches; hard chert.

Type location: Douglas County, Nevada; approximately 900 feet south and 200 feet west of the northeast corner of section 23, T. 10 N., R. 21 E.; USGS Topaz Lake 7.5 minute topographic quadrangle; 38

degrees, 43 minutes, 08.5 seconds north latitude and 119 degrees, 35 minutes, 20.5 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually dry, moist in some part from late October through early June and is dry for 90 to 120 consecutive days. Aridic bordering on Xeric moisture regime.

Soil temperature: 42 to 47 degrees.

Average summer soil temperature: 59 to 64 degrees.

Mollic epipedon thickness: 7 to 10 inches, includes the upper Bt horizon.

Depth to base of Bt horizon: 14 to 20 inches.

Depth to lithic contact: 14 to 20 inches.

Control section:

Clay content—25 to 35 percent, when mixed.

Rock fragments—35 to 50 percent when mixed, mainly pebbles or cobbles.

A horizon:

Chroma—2 or 3.

Bt horizon:

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4 may be 2 in upper part.

Texture—Very gravelly clay loam, gravelly loam, very gravelly loam or very cobbly clay loam, very stony clay loam.

Structure—Weak or moderate subangular blocky or is massive.

Pimogran series

The Pimogran series consists of shallow, excessively drained soils that formed in residuum and colluvium derived from granitic rock. Pimogran soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 18 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Sandy-skeletal, mixed, frigid, shallow Entic Haploxerolls

Typical pedon: Pimogran very gravelly loamy coarse sand, forestland, in a delineation of map unit 461. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 35 percent gravel, 10 percent cobbles, 10 percent stones, and 10 percent boulders.

A1—0 to 2 inches; grayish brown (10YR 5/2) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 35 percent gravel and 10 percent cobbles; slightly acid; clear wavy boundary.

A2—2 to 10 inches; brown (10YR 5/3) very gravelly loamy coarse sand, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine, and common medium roots; many very fine interstitial pores; 50 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.

C1—10 to 14 inches; light brownish gray (10YR 6/2) very gravelly coarse sand, dark grayish brown (10YR 4/2) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine interstitial and few very fine tubular pores; 45 percent gravel and 5 percent cobbles; 10 percent paragravel; slightly acid; clear wavy boundary.

C2—14 to 18 inches; light gray (10YR 7/2) very gravelly coarse sand, grayish brown (10YR 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine tubular and interstitial pores; 50 percent gravel and 5 percent cobbles; 10 percent paragravel; slightly acid; clear irregular boundary.

Cr—18 to 25 inches; weathered and fractured granitic rock; few roots in fractures.

Type location: Mono County, California; on the Toiyabe National Forest about 0.5 mile northeast of Shingle Mill Flat; about 2,150 feet south and 900 feet east of the northwest corner of section 15, T. 7 N., R. 23 E.; USGS Chris Flat 7.5 minute topographic quadrangle; 38 degrees, 27 minutes, 10.0 seconds north latitude and 119 degrees, 26 minutes, 42.6 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 10 to 14 inches.

Depth to bedrock: 14 to 20 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rocks such as granodiorite.

Particle-size control section:

Clay content—Averages 3 to 8 percent.

Rock fragments—Averages 35 to 60 percent, mainly fine gravel (2 to 5 mm diameter). Lithology of fragments are granitic rocks such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

C horizons:

Value—6 or 7 dry, 4 or 5 moist.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly coarse sand or very gravelly loamy coarse sand.

Clay content—3 to 8 percent.

Rock fragments—35 to 60 percent.

Pararock fragments—5 to 15 percent paragravel

Reaction—Slightly acid or neutral.

Pinenut series

The Pinenut series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Pinenut soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 15 inches and the mean annual temperature is about 44 degrees F.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid, shallow Aridic Argixerolls

Typical pedon: Pinenut very gravelly sandy loam--forest land. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with about 1 inch of pine needle duff, 5 percent stones, 10 percent cobbles, and 50 percent gravel.

A1—0 to 1 inch; dark grayish brown (10YR 4/2) very gravelly sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; common very fine interstitial pores; 5 percent stones, 5 percent cobbles, and 45 percent gravel; slightly acid (pH 6.2); abrupt wavy boundary.

A2—1 to 6 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; common very fine tubular and interstitial pores; 5 percent stones, 5 percent cobbles, and 45 percent gravel; slightly acid (pH 6.4); clear wavy boundary.

Bt1—6 to 13 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine, common fine, common medium, and common coarse roots; common very fine tubular and interstitial pores; common faint clay films on faces of peds and lining pores; 5 percent cobbles and 50 percent gravel; slightly acid (pH 6.4); clear wavy boundary.

Bt2—13 to 19 inches; light brown (7.5YR 6/4) very gravelly sandy clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; few very fine, few fine, few medium, and few coarse roots; common very fine tubular and interstitial pores; common faint clay films on faces of peds and lining pores; 5 percent cobbles and 50 percent gravel; neutral (pH 6.6); clear irregular boundary.

Cr—19 to 25 inches; fractured and weathered rhyolitic tuff; roots and fine-earth soil material in fractures.

R—25 inches; hard rhyolitic tuff.

Type location: Douglas County, Nevada; in the Pine Nut Mountains south of Buffalo Canyon; approximately 900 feet north and 1,200 feet west of the southeast corner of section 35, T. 12 N., R. 22 E.; USGS Double Spring 7.5 minute topographic quadrangle; 38 degrees, 51 minutes, 18 seconds north latitude and 119 degrees, 35 minutes, 24 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry from July through October; Aridic-Xeric moisture regime.

Soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 10 to 15 inches, including the upper part of the Bt horizon.

Depth to weathered bedrock: 14 to 20 inches.

Profile reaction: Slightly acid or neutral.

Control section:

Clay content—18 to 27 percent.

Rock fragments—35 to 60 percent, dominantly pebbles.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3 dry or moist.

Bt horizons:

Hue—10YR or 7.5YR

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4 dry or moist.

Clay content—18 to 27 percent.

Texture—Typically sandy clay loam, but may be heavy sandy loam.

Rock fragments—35 to 60 percent, dominantly pebbles.

Structure—Weak or moderate subangular blocky.

Pinew series

The Pinew series consists of shallow, well drained soils that formed in colluvium and residuum derived from tuff, tuff-breccia, and andesite. Pinew soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid, shallow Typic Argixerolls

Typical pedon: Pinew very gravelly sandy loam, forestland, in a delineation of map unit 370. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 5 percent cobbles, and 4 percent stones.

A1—0 to 1 inch; brown (7.5YR 5/3) very gravelly sandy loam, dark brown (7.5YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine interstitial pores; 40 percent gravel; slightly acid; clear smooth boundary.

A2—1 to 3 inches; brown (7.5YR 5/3) very gravelly sandy loam, dark brown (7.5YR 3/3) moist; weak medium platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular and interstitial pores; 40 percent gravel; neutral; clear wavy boundary.

Bt1—3 to 8 inches; brown (7.5YR 5/3) very gravelly sandy clay loam, dark brown (7.5YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine through medium roots; common very fine tubular and interstitial pores; common faint clay films bridging sand grains; 45 percent gravel; neutral; clear wavy boundary.

Bt2—8 to 15 inches; brown (7.5YR 4/3) very gravelly clay loam, dark brown (7.5YR 3/4) moist, moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine through medium roots; common very fine tubular and interstitial pores; common distinct clay films on faces of peds and

lining pores; 50 percent gravel, 25 percent paragravel; neutral.

Cr—15 to 21 inches; fractured, weathered tuff; some roots and fine-earth in fractures.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.75 mile south of Mogul Peak; about 650 feet north and 700 feet east of the southwest corner of section 30, T. 10 N., R. 21 E.; USGS Heenan Lake 7.5 minute topographic quadrangle; 38 degrees, 40 minutes, 44.3 seconds north latitude and 119 degrees, 43 minutes, 02.1 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring. Usually dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 7 to 14 inches; includes the Bt1 horizon.

Depth to bedrock: 14 to 20 inches to a paralithic contact.

The paralithic materials below the contact are weathered volcanic rocks such as andesitic tuff.

Sodium fluoride pH: 8.5 to 9.0.

Particle-size control section:

Clay content—Averages 18 to 27 percent,

Rock fragments—Averages 35 to 60 percent, mainly pebbles. Lithology of fragments are volcanic rocks such as tuff, tuff-breccia, and andesite.

A horizons:

Hue—10YR or 7.5YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Hue—10YR or 7.5YR.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly sandy clay loam, very gravelly sandy loam, or very gravelly loam.

Clay content—18 to 25 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 or 2 percent.

Reaction—Slightly acid or neutral.

Bt2 horizon:

Hue—10YR or 7.5YR.

Value—4 through 6 dry, 3 or 4 moist.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly clay loam, very gravelly sandy clay loam, or very gravelly loam.

Clay content—25 to 35 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Roadcat series

The Roadcat series consists of very deep, somewhat excessively drained soils that formed in till derived mainly from granitic rock. Roadcat soils are on moraines. Slopes are 4 to 30 percent. The mean annual precipitation is about 35 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Sandy-skeletal, mixed, frigid Typic Haploxerepts

Typical pedon: Roadcat extremely gravelly loamy coarse sand, forestland, in a delineation of map unit 170. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 35 percent gravel, 5 percent cobbles, 5 percent stones, and 5 percent boulders.

A—0 to 8 inches; brown (10YR 5/3) extremely gravelly loamy coarse sand, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots and common fine; common very fine interstitial and tubular pores; 60 percent gravel, 5 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

Bw—8 to 19 inches; brown (10YR 5/3) extremely gravelly coarse sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; common very fine interstitial and tubular pores; 55 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.

C1—19 to 36 inches; light brownish gray (10YR 6/2) extremely gravelly loamy coarse sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine interstitial and tubular pores; 55 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.

C2—36 to 60 inches; light brownish gray (10YR 6/2) extremely gravelly loamy coarse sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots;

many very fine and fine interstitial pores; 70 percent gravel and 5 percent cobbles; neutral.

Type location: Alpine County, California; on the Toiyabe National Forest in Hope Valley about 30 feet east of Highway 88; about 1,550 feet south and 200 feet east of the northwest corner of section 6, T. 10 N., R. 19 E.; USGS Freel Peak 7.5 minute topographic quadrangle; 38 degrees, 45 minutes, 51.4 seconds north latitude and 119 degrees, 56 minutes, 23.3 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 59 to 62 degrees.

Ochric epipedon thickness: 4 to 9 inches.

Depth to base of cambic horizon: 10 to 21 inches.

Particle-size control section:

Clay content—Averages 5 to 10 percent.

Sand content—More than 35 percent medium and coarser sand.

Rock fragments—Averages 60 to 80 percent, dominantly gravel. Lithology of fragments are mainly granitic rocks such as granodiorite.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Reaction—Moderately acid or slightly acid.

Organic matter content—2 to 4 percent.

Base saturation by ammonium acetate—30 to 50 percent.

Bw horizon:

Value—6 or 7 dry, 4 or 5 moist.

Chroma—2 or 3, dry or moist.

Clay content—8 to 12 percent.

Rock fragments—60 to 80 percent, dominantly gravel.

Reaction—Moderately acid to neutral.

Base saturation by ammonium acetate—60 to 90 percent.

C horizons:

Hue—10YR or 2.5Y.

Value—6 or 7 dry, 4 or 5 moist.

Chroma—2 or 3, dry or moist.

Clay content—3 to 10 percent.

Rock fragments—60 to 80 percent, dominantly gravel.

Reaction—Moderately acid to neutral.

Base saturation by ammonium acetate—60 to 90 percent.

Rolldown series

The Rolldown series consists of very deep, well drained soils that formed in volcanic ash and till derived from andesite, tuff, and metavolcanic rock. Rolldown soils are on moraines superimposed on mountains. Slopes are 4 to 30 percent. The mean annual precipitation is about 24 inches and the mean annual temperature is about 36 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Vitrandic Argicryolls

Typical pedon: Rolldown extremely gravelly ashy loam, rangeland, in a delineation of map unit 680. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 65 percent gravel, 20 percent cobbles, and 2 percent stones.

A1—0 to 2 inches; grayish brown (10YR 5/2) extremely gravelly ashy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine interstitial pores; 65 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.

A2—2 to 10 inches; grayish brown (10YR 5/2) very gravelly ashy loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, moderately sticky and slightly plastic; common very fine and fine roots; common very fine tubular and interstitial pores; 40 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.

Bt1—10 to 22 inches; brown (10YR 5/3) extremely gravelly sandy clay loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine and fine roots; many very fine interstitial and common very fine tubular pores; common distinct clay films on faces of peds and lining pores; 80 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.

Bt2—22 to 40 inches; brown (10YR 5/3) extremely gravelly sandy clay loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky

and moderately plastic; few very fine and fine roots; many very fine interstitial and common very fine tubular pores; common distinct clay films on faces of peds and lining pores; 70 percent gravel, 5 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

Bt3—40 to 60 inches; pale brown (10YR 6/3) extremely gravelly sandy clay loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine interstitial and common very fine tubular pores; common distinct clay films lining pores and coating rock fragments; 85 percent gravel; slightly acid.

Type location: Mono County, California; on the Toiyabe National Forest in the Sweetwater Mountains about 1.2 miles south of Mount Patterson; in a nonsectionized township about 1,080 feet north and 1,240 feet west of the projected southeast corner of section 26, T. 7 N., R. 24 E.; USGS Mount Patterson 7.5 minute topographic quadrangle; 38 degrees, 25 minutes, 14.5 seconds north latitude and 119 degrees, 18 minutes, 10.0 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 60 to 80 consecutive days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 47 to 54 degrees.

Mollic epipedon thickness: 10 to 16 inches.

Depth to base of argillic horizon: More than 60 inches.

Particle-size control section:

Clay content—Averages 18 to 27 percent.

Rock fragments—Averages 60 to 85 percent, mainly gravel. Lithology of fragments are volcanic rocks such as andesite and tuff or metavolcanic rock.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Volcanic glass content—15 to 30 percent in coarse silt through fine sand fractions.

Oxalate Al + 1/2 oxalate iron—0.2 to 0.4 percent.

Bt horizons:

Value—5 or 6 dry, 3 or 4 moist.
 Chroma—3 or 4, dry or moist.
 Texture—Extremely gravelly sandy clay loam or extremely gravelly loam.
 Clay content—18 to 27 percent.
 Rock fragments—60 to 85 percent.
 Reaction—Slightly acid or neutral.

Rose Creek series

The Rose Creek series consist of very deep, poorly drained soils that formed in stratified alluvium derived from mixed rocks. Rose Creek soils are on natural levees, flood plains, and stream terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 49 degrees.

Taxonomic class: Coarse-loamy, mixed, superactive, calcareous, mesic Fluvaquentic Endoaquolls

Typical pedon: Rose Creek fine sandy loam, rangeland in Washoe County, Nevada. (Colors are for dry soil unless otherwise noted.)

Ap—0 to 8 inches; grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard friable, slightly sticky and slightly plastic; many very fine to medium roots; common very fine to medium pores; 10 percent gravel; slightly effervescent; moderately alkaline; clear smooth boundary.

A—8 to 16 inches; grayish brown (10YR 5/2) sandy loam, very dark grayish brown (10YR 3/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many fine to medium roots; common very fine to medium pores; common medium prominent strong brown (7.5YR 5/6) moist masses of iron accumulation; 10 percent gravel; slightly effervescent; moderately alkaline; clear smooth boundary.

C—16 to 60 inches; light brownish gray (10YR 6/2) stratified very fine sandy loam, gravelly loamy sand, and sandy loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine to medium roots; few very fine to medium pores; common medium prominent strong brown (7.5YR 5/6) moist masses of iron accumulation; slightly effervescent; moderately alkaline.

Type location: Washoe County, Nevada; approximately 2,000 feet west and 1,600 feet south of the northeast corner of section 17, T. 19 N., R. 20 E.; USGS Reno 7.5 minute topographic quadrangle; 39 degrees, 30 minutes, 55 seconds north latitude and 119 degrees, 45 minutes, 26 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually dry from mid-summer through early fall in some part of the moisture control section for more than 90 cumulative days in normal years; moist in late fall, winter, spring, and early summer; Saturated to within a depth of 10 inches of the surface for short periods during most years; Short seasonal periods of aquic moisture regime.

Mean annual soil temperature: 47 to 52 degrees.

Mollic epipedon thickness: 10 to 18 inches.

Particle-size control section:

Clay content—Averages 8 to 18 percent.

Effervescence—Slightly effervescent through most of the profile, but individual horizons range from noneffervescent to violently effervescent in some pedons.

Reaction—Neutral to very strongly alkaline, depending on the presence of sodium and carbonates.

Other features—Buried A horizons are in some pedons.

A horizon:

Hue—10YR or 2.5Y.

Value—4 or 5 dry, 2 or 3 moist, the surface 1 to 3 inches in some pedons has value of 7 dry and 4 moist as a result of flood deposition.

Chroma—1 or 2, dry or moist.

C horizons:

Hue—10YR through 5Y.

Value—5 through 7 dry, 3 through 6 moist.

Chroma—1 through 3, dry or moist.

Texture—Sandy loam, fine sandy loam, very fine sandy loam, or loam; Includes stratified sand to silt loam and may include strata of coarse sand or silty clay loam.

Consistence—Very friable to friable.

Redoximorphic features—Redox concentrations of iron with hue of 2.5YR through 10YR and chroma of 3 through 8 are usually at a depth of 20 to 40 inches, but are as shallow as 3 inches in some pedons that are irrigated by controlled flooding.

Consistence—Loose through hard, dry; loose or very friable or friable, moist.

Shalgran series

The Shalgran series consists of shallow, somewhat excessively drained soils that formed in colluvium and residuum derived from granitic rock. Shalgran soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 45 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Sandy-skeletal, mixed, frigid, shallow Dystric Xerorthents

Typical pedon: Shalgran very bouldery coarse sand, forestland, in a delineation of map unit 180. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 5 percent stones, and 15 percent boulders.

A—0 to 3 inches; grayish brown (10YR 5/2) very bouldery coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and common fine roots; common very fine interstitial pores; 35 percent gravel, 10 percent stones, and 10 percent boulders; slightly acid; clear wavy boundary.

C1—3 to 6 inches; light brownish gray (10YR 6/2) very bouldery coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine, common medium, and common coarse roots; common very fine interstitial pores; 35 percent gravel, 10 percent stones, and 10 percent boulders; slightly acid; clear wavy boundary.

C2—6 to 14 inches; light brownish gray (10YR 6/2) very bouldery coarse sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine, many fine, common medium, and common coarse roots; many very fine interstitial pores; 35 percent gravel, 10 percent stones, and 10 percent boulders; slightly acid; clear wavy boundary.

Cr—14 to 20 inches; soft weathered granodiorite with some roots in fractures.

Type location: Alpine County, California; on the Toiyabe National Forest about 1.5 miles northeast of Luther Pass; about 200 feet south and 6,150 feet east of the northwest corner of section 13, T. 11 N., R. 18 E.; USGS Freel Peak 7.5 minute topographic quadrangle; 38 degrees, 48 minutes, 26.0 seconds north latitude and 119 degrees, 55 minutes, 33.2 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 59 to 64 degrees.

Ochric epipedon thickness: 3 to 9 inches.

Depth to bedrock: 10 to 20 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rock.

Particle-size control section:

Clay content—Averages less than 10 percent.

Rock fragments—Averages 35 to 60 percent.

Lithology of fragments are granitic rocks such as granodiorite.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3 dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Strongly acid to slightly acid.

C horizons:

Value—3 or 4 moist.

Chroma—2 or 3 dry or moist.

Texture—Very bouldery coarse sand or very bouldery loamy coarse sand.

Clay content—3 to 10 percent.

Rock fragments—35 to 60 percent.

Reaction—Strongly acid to slightly acid.

Shorthike series

The Shorthike series consists of very deep, somewhat excessively drained soils that formed in till derived from igneous and metamorphic rocks. Shorthike soils are on moraines. Slopes are 30 to 50 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Pachic Haploxerolls

Typical pedon: Shorthike very gravelly loamy coarse sand, rangeland, in a delineation of map unit 580. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 30 percent gravel, 10 percent cobbles, 10 percent stones, and 10 percent boulders.

- A1—0 to 2 inches; grayish brown (10YR 5/2) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 35 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.
- A2—2 to 10 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; common very fine tubular and interstitial pores; 45 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.
- Bw1—10 to 19 inches; brown (10YR 5/3) extremely gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine tubular and interstitial pores; 50 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.
- Bw2—19 to 30 inches; brown (10YR 5/3) extremely gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and common fine roots; common very fine tubular and interstitial pores; 50 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.
- Bw3—30 to 43 inches; light yellowish brown (10YR 6/4) extremely gravelly coarse sandy loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine tubular and interstitial pores; 75 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.
- C—43 to 60 inches; pale brown (10YR 6/3) extremely gravelly coarse sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine through coarse roots; common very fine and fine tubular and common very fine interstitial pores; 65 percent gravel and 10 percent cobbles; neutral.

Type location: Mono County, California; on the Toiyabe National Forest north of Green Creek and about 1.4 miles northeast of the Green Creek Campground; about 1,190 feet south and 1,000 feet west of the northeast corner of section 18, T. 3 N., R. 25 E.; USGS Dunderberg Peak 7.5 minute topographic quadrangle; 38 degrees, 07 minutes, 10.1 seconds north latitude and 119 degrees, 15 minutes, 13.5 seconds west longitude, NAD27.

Range in Characteristics:

- Soil moisture:* Usually moist in the moisture control section during fall, winter, and spring; dry from July through early October; Xeric moisture regime.
- Mean annual soil temperature:* 44 to 47 degrees.
- Mollic epipedon thickness:* 20 to 30 inches; includes the Bw1 and Bw2 horizons.
- Particle-size control section:*
- Clay content—Averages 10 to 15 percent.
 - Rock fragments—Averages 60 to 80 percent, mainly gravel and cobbles. Lithology of fragments are mixed igneous and metamorphic rocks such as granodiorite, andesite, schist, and gneiss.
 - Sand content—40 to 50 percent medium sand through very coarse sand.

A horizons:

- Value—4 or 5 dry, 2 or 3 moist.
- Chroma—2 or 3, dry or moist.
- Organic matter content—2 to 4 percent.
- Reaction—Slightly acid or neutral.

Bw1 and Bw2 horizons:

- Texture—Extremely gravelly coarse sandy loam or extremely cobbly coarse sandy loam.
- Clay content—10 to 15 percent.
- Rock fragments—60 to 80 percent.
- Organic matter content—1 to 3 percent.
- Reaction—Slightly acid or neutral.

Bw3 horizon:

- Texture—Extremely gravelly coarse sandy loam or extremely cobbly coarse sandy loam.
- Clay content—10 to 15 percent.
- Rock fragments—60 to 80 percent.
- Reaction—Slightly acid or neutral.

C horizon:

- Hue—10YR or 2.5Y.
- Value—6 or 7 dry, 4 or 5 moist.
- Chroma—3 or 4, dry or moist.
- Texture—Extremely gravelly coarse sandy loam or extremely cobbly coarse sandy loam.
- Clay content—10 to 15 percent.
- Rock fragments—60 to 80 percent.
- Reaction—Slightly acid or neutral.

Shree series

The Shree series consists of very deep, well drained

soils that formed in alluvium from mixed rock sources. These soils are on fan remnants. Slopes are 2 to 15 percent. Mean annual precipitation is about 12 inches. Mean annual air temperature is about 47 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Aridic Argixerolls

Typical pedon: Shree very gravelly sandy loam, rangeland, in a delineation of map unit 651 (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 30 percent gravel, 5 percent cobbles and 1 percent stones.

A1—0 to 6 inches; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine tubular and interstitial pores; 35 percent gravel, 5 percent cobbles; neutral; clear smooth boundary.

A2—6 to 14 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine tubular and interstitial pores; 35 percent gravel, 15 percent cobbles; neutral; clear wavy boundary.

Bt1—14 to 19 inches; brown (10YR 5/3) extremely gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine tubular and interstitial pores; common distinct clay films coating ped faces and lining pores; 45 percent gravel, 15 percent cobbles; neutral; clear wavy boundary.

Bt2—19 to 40 inches; pale brown (10YR 6/3) extremely gravelly sandy clay loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common very fine and few fine roots; common very fine tubular and interstitial pores; common distinct clay films coating ped faces and lining pores; 45 percent gravel, 20 percent cobbles; neutral; clear wavy boundary.

C—40 to 60 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, brown (10YR 4/3) moist; massive; hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very

fine tubular and interstitial pores; 45 percent gravel, 15 percent cobbles; neutral.

Type location: Mono County, California; on the Toiyabe National Forest about 2.7 miles southwest of Sweetwater Ranch; about 200 feet north and 50 feet east of the southwest corner of section 20, T. 7 N.; R. 25 E.; USGS Sweetwater Creek 7.5 minute topographic quadrangle; 38 degrees, 26 minutes, 37.7 seconds north latitude and 119 degrees, 13 minutes, 15.8 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually moist in winter and spring, dry in summer through late fall; aridic moisture regime that borders on xeric.

Soil temperature: 49 to 52 degrees.

Mollic epipedon thickness: 10 to 15 inches.

Particle-size control section:

Percent clay—Averages 27 to 35 percent.

Rock fragments—Averages 40 to 65 percent, dominantly gravel. Lithology of fragments are mixed igneous and metamorphic rocks such as granodiorite, schist, gneiss, and andesite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3 dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt1 horizon:

Hue—10YR or 7.5YR.

Value—4 or 5 dry.

Chroma—2 or 3 dry or moist.

Texture—Extremely gravelly sandy clay loam or very gravelly sandy clay loam.

Clay content—27 to 35 percent.

Rock fragments—40 to 65 percent.

Organic matter content—1 to 3 percent

Reaction—Slightly acid or neutral.

Bt2 horizon:

Hue—10YR or 7.5YR.

Value—5 or 6 dry.

Chroma—3 or 4 dry or moist.

Texture—Extremely gravelly sandy clay loam or very gravelly sandy clay loam.

Rock fragments—40 to 65 percent.

Reaction—Neutral or slightly alkaline.

C horizon:

Hue—

Value—5 through 7 dry, 3 through 5 moist.

Chroma—2 through 4, dry or moist.

Texture—Extremely gravelly sandy loam, or very gravelly sandy loam.

Rock fragments—40 to 65 percent.

Reaction—Neutral or slightly alkaline

Smallcone series

The Smallcone series consists of very shallow, well drained soils that formed in residuum derived from hydrothermally altered andesitic rock. Smallcone soils are on hills and mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 47 degrees.

Taxonomic class: Loamy-skeletal, mixed, active, nonacid, mesic, shallow Xeric Torriorthents

Typical pedon: Smallcone very gravelly coarse sandy loam, forestland, in adjacent Douglas County. (Colors are for dry soil unless otherwise noted.) The surface is covered by approximately 65 percent gravel.

A—0 to 2 inches, light yellowish brown (10YR 6/4) very gravelly coarse sandy loam, dark yellowish brown (10YR 4/6) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine interstitial pores; 55 percent gravel; moderately acid; clear smooth boundary.

C—2 to 8 inches, light yellowish brown (10YR 6/4) extremely gravelly sandy loam, dark yellowish brown (10YR 4/6) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine and medium roots; common very fine and medium interstitial pores; 60 percent gravel, 5 percent cobbles; strongly acid; clear irregular boundary.

Cr—8 to 20 inches; weathered and fractured hydrothermally altered andesite.

Type location: Douglas County, Nevada; in the Pine Nut Range about 0.75 mile northeast of Youngs Crossing; about 1,800 feet south and 2,100 feet east of the northwest corner of section 24, T. 11 N., R. 20 E.; USGS Carters Station 7.5 minute topographic quadrangle; 38 degrees, 48 minutes, 17 seconds north latitude and 119 degrees, 41 minutes, 14 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in late fall, winter, and spring, dry for the remainder of the year; aridic moisture regime that borders on xeric.

Mean annual soil temperature: 47 to 52 degrees.

Ochric epipedon thickness: 2 to 4 inches.

Depth to bedrock: 4 to 10 inches to a paralithic contact.

The paralithic materials below the contact are weathered volcanic rocks such as andesite.

Particle-size control section:

Clay content—5 to 18 percent.

Rock fragments—35 to 75 percent, mostly fine pebbles. Lithology of fragments are hydrothermally altered volcanic rocks such as andesite or andesitic tuff.

Reaction—Strongly acid or moderately acid. The pH is 5.6 to 6.0 in at least one part of the control section which is usually the A horizon.

A horizon:

Value—6 or 7 dry, 4 or 5 moist.

Chroma—4 to 6, dry or moist.

C horizon:

Value—6 or 7 dry, 4 or 5 moist.

Chroma—4 through 6, dry or moist.

Texture—Very gravelly coarse sandy loam or extremely gravelly sandy loam.

Snowtell series

The Snowtell series consists of very shallow, well drained soils that formed in reworked till derived from volcanic rocks. Snowtell soils are on mountains. Slopes are 8 to 75 percent. The mean annual precipitation is about 35 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, isotic Humic Lithic Dystrocrypts

Typical pedon: Snowtell very gravelly coarse sandy loam, forestland, in a delineation of map unit 174. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 35 percent gravel, 5 percent cobbles, 5 percent stones, and 5 percent boulders.

A1—0 to 1 inch; dark grayish brown (10YR 4/2) very gravelly coarse sandy loam, very dark grayish brown

(10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 35 percent gravel and 10 percent cobbles; very strongly acid; clear wavy boundary.

A2—1 to 3 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine, common fine, and common medium roots; common very fine tubular and interstitial pores; 35 percent gravel and 10 percent cobbles; strongly acid; clear wavy boundary.

A3—3 to 10 inches; yellowish brown (10YR 5/4) very gravelly coarse sandy loam, dark brown (7.5YR 3/3) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine, fine, medium and coarse roots; common very fine tubular and interstitial pores; few faint clay bridges between sand grains; 35 percent gravel and 10 percent cobbles; strongly acid; abrupt irregular boundary.

2R—10 inches; hard unweathered granodiorite.

Type location: Mono County, California; on the Toiyabe National Forest about 2,000 feet southeast of Sardine Meadow; about 2,150 feet south and 1,900 feet east of the northwest corner of section 6, T. 5 N., R. 22 E.; USGS Pickel Meadow 7.5 minute topographic quadrangle; 38 degrees, 18 minutes, 42.7 seconds north latitude and 119 degrees, 35 minutes, 54.7 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Umbric epipedon thickness: 4 to 10 inches.

Depth to bedrock: 4 to 10 inches to a lithic contact.

Particle-size control section:

Clay content—Averages 10 to 18 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel and cobbles. Lithology of fragments are mixed igneous and metamorphic rocks such as andesite, granodiorite, schist, or gneiss.

A1 and A2 horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Very strongly acid or strongly acid.

Sodium fluoride pH—8.5 to 9.5.

A3 horizon:

Hue—10YR, 7.5YR or 2.5Y.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 through 4 dry, 2 or 3 moist.

Organic matter content—2 to 4 percent.

Reaction—Very strongly acid or strongly acid.

Sodium fluoride pH—9.5 to 11.0.

Sofgran series

The Sofgran series consists of very deep, somewhat excessively drained soils that formed in colluvium and residuum derived from granitic rock. Sofgran soils are on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 45 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Sandy-skeletal, mixed Typic Cryorthents

Typical pedon: Sofgran gravelly loamy coarse sand, forestland, in a delineation of map unit 130. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with one inch of forest duff that is undecomposed pine needles. It also is partially covered with 20 percent gravel, 5 percent cobbles, 1 percent stones, and 3 percent boulders.

A1—0 to 3 inches; brown (10YR 5/3) gravelly loamy coarse sand, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and common fine roots; common very fine interstitial pores; 25 percent gravel and 5 percent boulders; very strongly acid; clear wavy boundary.

A2—3 to 6 inches; brown (10YR 5/3) gravelly loamy coarse sand, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and common fine roots; common very fine interstitial and tubular pores; 25 percent gravel; strongly acid; clear wavy boundary.

Bw1—6 to 9 inches; pale brown (10YR 6/3) very gravelly loamy coarse sand, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine to coarse roots; common very fine interstitial and tubular pores; 35 percent gravel; strongly acid; clear wavy boundary.

Bw2—9 to 19 inches; pale brown (10YR 6/3) gravelly loamy coarse sand, brown (10YR 4/3) moist; weak

medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, many fine, many medium, and many coarse roots; common very fine interstitial and tubular pores; 25 percent gravel and 10 percent cobbles; strongly acid; clear irregular boundary.

Bw3—19 to 27 inches; light yellowish brown (10YR 6/4) very gravelly coarse sand, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine to coarse roots; common very fine interstitial pores; 30 percent gravel and 5 percent cobbles; strongly acid; clear irregular boundary.

Bw4—27 to 45 inches; light yellowish brown (10YR 6/4) extremely gravelly loamy coarse sand, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and common fine roots; common very fine and common fine interstitial pores; 55 percent gravel and 20 percent cobbles; strongly acid; clear wavy boundary.

Bw5—45 to 60 inches; light yellowish brown (10YR 6/4) very gravelly loamy coarse sand, yellowish brown (10YR 5/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, few fine, and few medium roots; common very fine interstitial pores; 40 percent gravel and 15 percent cobbles; strongly acid.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.3 mile southeast of Horse Meadow; about 1,500 feet south and 2,550 feet west of the northeast corner of section 7, T. 11 N., R. 19 E.; USGS Freel Peak 7.5 minute topographic quadrangle; 38 degrees, 50 minutes, 2.9 seconds north latitude and 119 degrees, 53 minutes, 24.1 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Ochric epipedon thickness: 6 to 9 inches.

Depth to bedrock: 60 to 80 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rock such as granodiorite.

Particle-size control section:

Clay content—Averages less than 10 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel. The upper part typically ranges from 35 to 50 percent, and the lower part ranges from 60 to 80 percent. Lithology of fragments is granitic rocks such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Very strongly acid or strongly acid.

Bw1, Bw2, and Bw3 horizons:

Value—4 or 5 moist.

Chroma—3 or 4, dry or moist.

Texture—Gravelly loamy coarse sand, very gravelly loamy coarse sand, or very gravelly coarse sand.

Clay content—3 to 10 percent.

Rock fragments—25 to 40 percent, mainly gravel.

Reaction—Very strongly acid or strongly acid.

Bw4, Bw5 horizons:

Value—4 or 5 moist.

Chroma—1 or 2, dry or moist.

Texture—Very gravelly loamy coarse sand or extremely gravelly loamy coarse sand.

Clay content—3 to 10 percent.

Rock fragments—50 to 80 percent, mainly gravel.

Sonorapass series

The Sonorapass series consists of moderately deep, well drained soils that formed in reworked till derived from volcanic rocks. Sonorapass soils are on mountains. Slopes are 8 to 30 percent. The mean annual precipitation is about 35 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, isotic Xeric Dystrocrypts

Typical pedon: Sonorapass very gravelly coarse sandy loam, forestland, in a delineation of map unit 174. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 5 percent cobbles, 5 percent stones, and 5 percent boulders.

A1—0 to 3 inches; grayish brown (10YR 5/2) very gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy parting to moderate fine subangular blocky structure; slightly

hard, very friable, nonsticky and nonplastic; many very fine and common fine roots; common very fine tubular and interstitial pores; 35 percent gravel; slightly acid; clear smooth boundary.

A2—3 to 8 inches; grayish brown (10YR 5/2) very gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine through very coarse roots; common very fine tubular and interstitial pores; 35 percent gravel and 15 percent cobbles; moderately acid; clear wavy boundary.

Bw1—8 to 17 inches; brown (10YR 5/3) extremely cobbly coarse sandy loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine through very coarse roots; 45 percent gravel, 20 percent cobbles, and 5 percent stones; moderately acid; clear wavy boundary.

Bw2—17 to 21 inches; yellowish brown (10YR 5/4) extremely gravelly coarse sandy loam, dark yellowish brown (10YR 3/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, medium, coarse and very coarse roots; common very fine tubular and interstitial pores; 40 percent gravel, and 20 percent cobbles; moderately acid; abrupt irregular boundary.

2R—21 inches; hard, unweathered granodiorite.

Type location: Mono County, California; on the Toiyabe National Forest about 1,900 feet southeast of Sardine Meadow; about 2,100 feet south and 1,450 feet east of the northwest corner of section 6, T. 5 N., R. 22 E.; USGS Pickel Meadow 7.5 minute topographic quadrangle; 38 degrees, 18 minutes, 42.7 seconds north latitude and 119 degrees, 35 minutes, 57.8 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from mid-July through September for 60 to 80 consecutive days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Umbric epipedon thickness: 14 to 20 inches; includes the Bw1 horizon.

Depth to bedrock: 20 to 40 inches to a lithic contact.

Particle-size control section:

Clay content—Averages 10 to 18 percent.

Rock fragments—Averages 60 to 80 percent, mainly gravel and cobbles. Lithology of fragments are mixed igneous and metamorphic rocks such as andesite, granodiorite, schist, or gneiss.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Moderately acid or slightly acid.

Sodium fluoride pH—8.5 to 9.5.

Bw1 horizon:

Chroma—2 or 3, dry or moist.

Texture—Extremely gravelly coarse sandy loam or extremely cobbly coarse sandy loam.

Clay content—10 to 18 percent.

Rock fragments—60 to 80 percent.

Organic matter content—2 to 4 percent.

Reaction—Strongly acid or moderately acid.

Sodium fluoride pH—9.5 to 11.5.

Bw2 horizon:

Chroma—3 or 4, dry or moist.

Texture—Extremely gravelly coarse sandy loam or extremely cobbly coarse sandy loam.

Clay content—10 to 18 percent.

Rock fragments—60 to 80 percent.

Reaction—Strongly acid or moderately acid.

Sodium fluoride pH—9.5 to 11.5.

Springmeyer series

The Springmeyer series consists of very deep, well drained soils that formed in mixed alluvium. Springmeyer soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 12 inches, and the mean annual temperature is about 48 degrees.

Taxonomic class: Fine-loamy, mixed, superactive, mesic Aridic Argixerolls

Typical pedon: Springmeyer gravelly sandy loam, rangeland, in a delineation of map unit 670. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 20 percent gravel.

A1—0 to 2 inches; brown (10YR 5/3) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable,

nonsticky and nonplastic; common very fine roots; common very fine interstitial pores; 15 percent gravel; slightly acid; clear smooth boundary.

- A2—2 to 10 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and many very fine roots; common very fine tubular and interstitial pores; 15 percent gravel; slightly acid; clear wavy boundary.
- Bt1—10 to 12 inches; grayish brown (10YR 5/2) gravelly sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular and interstitial pores; few faint clay films bridging sand grains; 15 percent gravel; neutral; clear wavy boundary.
- Bt2—12 to 17 inches; brown (10YR 5/3) gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine interstitial and tubular pores; few faint clay films bridging sand grains; 20 percent gravel; neutral; clear wavy boundary.
- Bt3—17 to 24 inches; yellowish brown (10YR 5/4) gravelly sandy clay loam, dark yellowish brown (10YR 3/4) moist; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; few very fine and common fine roots; common very fine tubular and interstitial pores; common distinct clay films coating ped faces and lining pores; 15 percent gravel; neutral; clear wavy boundary.
- Bt4—24 to 32 inches; light yellowish brown (10YR 6/4) gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; few very fine and fine roots; few very fine tubular and interstitial pores; common faint clay films bridging sand grains; 20 percent gravel; neutral; clear wavy boundary.
- C—32 to 60 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable; nonsticky and nonplastic; few very fine and fine roots; common very fine tubular and interstitial pores; common fine and medium prominent strong brown (7.5YR 4/6) irregular masses of relict iron accumulation in the matrix; 25 percent gravel; neutral; clear wavy boundary.

Type location: Mono County, California; on the Toiyabe National Forest in Indian Valley; about 1,250 feet north and 600 feet east of the southwest corner of section 11, T. 8 N.; R. 23 E.; USGS Risue Canyon 7.5 minute topographic quadrangle; 38 degrees, 33 minutes, 0.3 seconds north latitude and 119 degrees, 25 minutes, 36.6 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually moist in winter and spring, dry in summer through late fall; aridic moisture regime that borders on xeric.

Soil temperature: 47 to 50 degrees.

Mollic epipedon thickness: 14 to 20 inches.

Particle-size control section:

Percent clay—Averages 25 to 35 percent.

Rock fragments—Averages 5 to 35 percent, dominantly gravel. Lithology of fragments are mixed igneous and metamorphic rocks such as granodiorite, schist, gneiss, and andesite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3 dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt horizons:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—2 through 4, dry or moist.

Structure—Prismatic or subangular blocky.

Texture—Gravelly sandy clay loam, loam or clay loam.

Clay content—25 to 35 percent.

Rock fragments—5 to 35 percent.

Reaction—Slightly acid or neutral.

C horizon:

Hue—10YR or 7.5YR.

Value—5 through 7 dry, 4 or 5 moist.

Chroma—3 or 4 dry or moist.

Texture—Stratified extremely gravelly loamy sand to sandy clay loam.

Rock fragments—5 to 70 percent.

Reaction—Neutral or slightly alkaline.

Other features—Relict redox concentrations are in the B and C horizons of some pedons. Up to 5 percent durinodes are in some pedons below 40 inches.

Stumpatil series

The Stumpatil series consists of very deep, well drained soils that formed in till derived from mixed rocks.

Stumpatil soils are on moraines. Slopes are 8 to 40 percent. The mean annual precipitation is about 45 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, isotic Umbric Xeric Haplocryalfs

Typical pedon: Stumpatil very gravelly coarse sandy loam, forestland, in a delineation of map unit 171. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 35 percent gravel, 5 percent stones, and 5 percent boulders.

A1—0 to 6 inches; dark grayish brown (10YR 4/2) very gravelly coarse sandy loam, very dark brown (10YR 2/2) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; common very fine interstitial and tubular pores; 50 percent gravel and 5 percent boulders; moderately acid; clear wavy boundary.

A2—6 to 11 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine, common fine, and common medium roots; common very fine interstitial and tubular pores; 45 percent gravel and 5 percent cobbles; moderately acid; clear wavy boundary.

AB—11 to 26 inches; yellowish brown (10YR 5/4) very gravelly coarse sandy loam, dark yellowish brown (10YR 3/4) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots and many fine and medium; common very fine interstitial and tubular pores; 45 percent gravel and 10 percent cobbles; moderately acid; clear wavy boundary.

Bt—26 to 33 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; few very fine, few fine, few medium, and common very coarse roots; few very fine interstitial and tubular pores; few faint clay films bridging sand grains; 45 percent gravel and 10 percent cobbles; moderately acid; clear wavy boundary.

Btq—33 to 60 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; very hard, firm and brittle, slightly sticky and

nonplastic; few very fine, few fine, few medium, and common very coarse roots; few very fine interstitial and tubular pores; 20 percent distinct clay films lining pores and coating rock fragments; 15 percent discontinuous weak cementation; 45 percent gravel and 10 percent cobbles; moderately acid.

Type location: Alpine County, California; on the Toiyabe National Forest about 1.2 miles southeast of Red Lake; about 2,250 feet south and 1,000 feet east of the northwest corner of section 25, T. 10 N., R. 18 E.; USGS Carson Pass 7.5 minute topographic quadrangle; 38 degrees, 41 minutes, 1.3 seconds north latitude and 119 degrees, 57 minutes, 26.9 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Umbric epipedon thickness: 10 to 16 inches.

Depth to argillic horizon: 26 to 40 inches.

Sodium fluoride pH: 9.5 to 11.0.

Particle-size control section:

Clay content—Averages 12 to 18 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel. Lithology of fragments are volcanic rocks such as tuff, granitic rocks such as granodiorite, and metamorphic rocks such as quartzite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 6 percent.

Reaction—Strongly acid or moderately acid.

AB horizon:

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Very gravelly coarse sandy loam or very gravelly sandy loam.

Clay content—10 to 15 percent.

Rock fragments—35 to 60 percent.

Reaction—Strongly acid or moderately acid.

Bt horizon:

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Very gravelly sandy loam or very gravelly coarse sandy loam.

Clay content—13 to 18 percent.
 Rock fragments—35 to 60 percent.
 Reaction—Strongly acid or moderately acid.

Btq horizon:

Value—5 or 6 dry, 3 or 4 moist.
 Chroma—3 or 4, dry or moist.
 Texture—Very gravelly sandy loam or very gravelly coarse sandy loam.
 Clay content—13 to 18 percent.
 Rock fragments—35 to 60 percent.
 Reaction—Strongly acid or moderately acid.
 Cementation—10 to 50 percent weak discontinuous cementation with a brittle manner of failure.

Sumeadow series

The Sumeadow series consists of very deep, well drained soils that formed in colluvium derived from andesite, tuff, or tuff-breccia. Sumeadow soils are on mountains. Slopes are 4 to 50 percent. The mean annual precipitation is about 30 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, isotic Xeric
 Dystrocrypts

Typical pedon: Sumeadow very gravelly peaty sandy loam, forestland, in a delineation of map unit 470. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with about 2 inches of undecomposed duff and 25 percent gravel, 5 percent cobbles, and 5 percent stones.

Oi—0 to 0.5 inch; very dark grayish brown (10YR 3/2) slightly decomposed plant material composed of fibrous needle litter, black (10YR 2/1) moist.

A1—0.5 to 2 inches; dark grayish brown (10YR 4/2) very gravelly peaty sandy loam, very dark brown (10YR 2/2) moist; moderate medium platy parting to weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine roots; common very fine interstitial pores; 25 percent gravel, 5 percent cobbles, and 5 percent stones; strongly acid; clear smooth boundary.

A2—2 to 13 inches; brown (10YR 4/3) extremely gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, and many fine, many medium, many coarse, and many very coarse roots; common very fine tubular and interstitial pores; 47 percent

gravel, 10 percent cobbles, and 10 percent stones; strongly acid; clear wavy boundary.

Bw1—13 to 32 inches; yellowish brown (10YR 5/4) extremely gravelly coarse sandy loam, dark yellowish brown (10YR 3/4) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, many fine, many medium, many coarse, and many very coarse roots; common very fine tubular and interstitial pores; 50 percent gravel, 20 percent cobbles, and 5 percent stones; strongly acid; clear wavy boundary.

Bw2—32 to 40 inches; yellowish brown (10YR 5/4) extremely gravelly coarse sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, many fine, many medium, many coarse, and many very coarse roots; common very fine and fine tubular and interstitial pores; 50 percent gravel, 20 percent cobbles, and 5 percent stones; strongly acid; clear wavy boundary.

Bw3—40 to 46 inches; yellowish brown (10YR 5/4) extremely gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, common fine, common medium, and common coarse roots; common very fine tubular and interstitial pores; 60 percent gravel and 15 percent cobbles; strongly acid; clear wavy boundary.

BC—46 to 65 inches; yellowish brown (10YR 5/4) extremely gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine, common fine, common medium, common coarse, and common very coarse roots; common very fine tubular and interstitial pores; few fine faint brown (7.5YR 4/4) moist, irregular masses of iron accumulation; 55 percent gravel and 10 percent cobbles; strongly acid.

Type location: Mono County, California; on the Toiyabe National Forest about 1,500 feet south of Summit Meadow; about 1,200 feet north and 1,100 feet west of the southeast corner of section 35, T. 7 N., R. 22 E.; USGS Lost Cannon Peak 7.5 minute topographic quadrangle; 38 degrees, 24 minutes, 21.2 seconds north latitude and 119 degrees, 31 minutes, 23.7 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from mid-July through September for 60 to 80 consecutive

days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Umbric epipedon thickness: 10 to 16 inches.

Depth to base of cambic horizon: 35 to 50 inches.

Depth to bedrock: More than 80 inches.

Sodium fluoride pH: 10.0 to 11.5.

Particle-size control section:

Clay content—Averages 10 to 18 percent.

Rock fragments—Averages 60 to 80 percent, mainly gravel and cobbles. Lithology of fragments are andesite, tuff, or tuff breccia.

A1 horizon:

Organic matter content—10 to 18 percent.

Reaction—Strongly acid or moderately acid.

A2 horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—3 to 5 percent.

Reaction—Strongly acid or moderately acid.

Bw and BC horizons:

Hue—10YR or 2.5Y.

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Extremely gravelly coarse sandy loam or extremely gravelly sandy loam.

Clay content—10 to 18 percent.

Rock fragments—60 to 80 percent.

Reaction—Strongly acid or moderately acid.

Sweetmount series

The Sweetmount series consists of deep, well drained soils that formed in residuum and colluvium derived from andesite, tuff and tuff-breccia. Sweetmount soils are on mountains. Slopes are 4 to 30 percent. The mean annual precipitation is about 22 inches and the mean annual temperature is about 39 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Pachic Argicryolls

Typical pedon: Sweetmount very gravelly sandy loam, rangeland, in a delineation of map unit 770. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 5 percent cobbles, 3 percent stones, and 1 percent boulders.

A—0 to 2 inches; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 35 percent gravel; slightly acid; clear wavy boundary.

Bt1—2 to 8 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine tubular and interstitial pores; few faint clay bridges between sand grains; 40 percent gravel, 15 percent stones; slightly acid; clear wavy boundary.

Bt2—8 to 16 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; many very fine, fine, medium and coarse roots; common very fine tubular and interstitial pores; common faint clay bridges between sand grains; 35 percent gravel, 5 percent cobbles, and 10 percent stones; neutral; clear wavy boundary.

Bt3—16 to 24 inches; brown (10YR 5/3) very gravelly clay loam, dark brown (10YR 3/3) moist; moderate medium and coarse subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine tubular and interstitial pores; many distinct clay films on faces of peds and lining pores; 40 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.

Bt4—24 to 33 inches; brown (10YR 5/3) very gravelly clay loam, dark brown (10YR 3/3) moist; strong fine and medium angular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine tubular and interstitial pores; many distinct clay films on faces of peds and lining pores; 40 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.

Bt5—33 to 39 inches; light brownish gray (10YR 6/2) very gravelly clay loam, dark grayish brown (10YR 4/2) moist; strong medium angular blocky structure; hard, friable, moderately sticky and moderately plastic; few very fine and fine roots; common very fine tubular pores; many distinct clay films on faces of peds and lining pores; 40 percent gravel and 5 percent cobbles; 20 percent paragravel; neutral; clear wavy boundary.

Bt6—39 to 55 inches; light yellowish brown (10YR 6/4) extremely gravelly clay, dark yellowish brown (10YR 4/4) moist; moderate medium angular blocky structure; hard, firm, very sticky and very plastic; few very fine and fine roots; common very fine tubular

pores; many distinct clay films on faces of peds and lining pores; 60 percent gravel and 5 percent cobbles; 20 percent paragravel; neutral; clear irregular boundary.

Crt—55 inches; weathered andesitic tuff; illuvial clay lines fractures.

Type location: Mono County, California; on the Toiyabe National Forest in the Sweetwater Mountains about 2 miles southwest of Lobdell Lake; about 1,150 feet north and 400 feet west of the southeast corner of section 30, T. 7 N., R. 24 E.; USGS Chris Flat 7.5 minute topographic quadrangle; 38 degrees, 25 minutes, 12.7 seconds north latitude and 119 degrees, 22 minutes, 35.4 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 60 to 80 consecutive days in the four months following the summer solstice; Typic xeric moisture regime.

Mean annual soil temperature: 42 to 46 degrees.

Mean summer soil temperature: 52 to 59 degrees.

Mollic epipedon thickness: 24 to 36 inches; includes the Bt1 through Bt4 horizons.

Depth to base of argillic horizon: 40 to 60 inches.

Depth to bedrock: 40 to 60 inches to a paralithic contact.

The paralithic materials below the contact are weathered andesitic rock.

Particle-size control section:

Clay content—Averages 18 to 27 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel. Lithology of fragments are volcanic rocks such as andesite, tuff, or tuff-breccia.

Other features—Clay content increases steadily with depth and is typically more than 27 percent in the lower part of the argillic horizon.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Bt1 and Bt2 horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly loam, very gravelly sandy clay loam, or very gravelly clay loam.

Clay content—18 to 27 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt3 horizon:

Clay content—27 to 35 percent.

Rock fragments—35 to 60 percent.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

Bt4 and Bt5 horizons:

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Clay content—27 to 35 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Bt6 horizon:

Value—5 or 6 dry, 3 or 4 moist.

Chroma—3 or 4, dry or moist.

Texture—Extremely gravelly clay or very gravelly clay loam.

Clay content—35 to 50 percent.

Rock fragments—50 to 80 percent.

Reaction—Slightly acid or neutral.

Temo series

The Temo series consists of very shallow and shallow, excessively drained soils that formed in residuum and colluvium derived from granitic rock. Temo soils are on mountains. Slopes are 8 to 75 percent. The mean annual precipitation is about 40 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Mixed, shallow Typic Cryopsamments

Typical pedon: Temo very gravelly loamy coarse sand, forestland, in a delineation of map unit 130. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 30 percent gravel, 5 percent cobbles, 5 percent stones, 5 percent boulders and has up to 2 inches of slightly decomposed forest duff composed of pine and fir needles.

A—0 to 4 inches; brown (10YR 5/3) very gravelly loamy coarse sand, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine tubular and interstitial pores; 25 percent

gravel, 5 percent cobbles, and 5 percent stones; strongly acid; clear wavy boundary.

C1—4 to 10 inches; pale brown (10YR 6/3) very gravelly loamy coarse sand, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, medium and coarse roots; common very fine tubular and interstitial pores; 25 percent gravel, 5 percent stones; strongly acid; clear wavy boundary.

C2—10 to 16 inches; very pale brown (10YR 7/3) gravelly coarse sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, fine, medium and coarse roots; many very fine and fine interstitial pores; 15 percent pebbles, 50 percent paragravel; strongly acid; abrupt wavy boundary.

Cr—16 inches; weathered granodiorite.

Type location: Alpine County, California; on the Toiyabe National Forest about 1.5 miles southwest of Horse Meadow; about 400 feet south and 2,400 feet west of the northeast corner of section 12, T.11 N., R.18 E.; USGS Freel Peak 7.5 minute topographic quadrangle; 38 degrees, 49 minutes, 15.2 seconds north latitude and 119 degrees, 54 minutes, 29.2 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually moist, but are dry in all parts from some time in July until early October; xeric moisture regime.

Mean annual soil temperature: 40 to 44 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Ochric epipedon thickness: 6 to 10 inches.

Depth to bedrock: 8 to 20 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rock such as granodiorite.

Reaction: Strongly acid to slightly acid.

Particle-size control section:

Clay content—2 to 8 percent.

Rock fragments—10 to 35 percent, mainly fine pebbles. Lithology of fragments are granitic rocks such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—0.5 to 1 percent.

C horizon:

Value—5 through 7 dry, 3 through 5 moist.

Chroma—2 through 4, dry or moist.

Texture—Coarse sand, gravelly coarse sand, or gravelly loamy coarse sand.

Rock fragments—10 to 35 percent.

Thiefridge series

The Thiefridge series consists of shallow, well drained soils that formed in colluvium and residuum derived from tuff, tuff-breccia, and andesite. Thiefridge soils are on mountains. Slopes are 4 to 75 percent. The mean annual precipitation is about 30 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, Lithic Argicryolls

Typical pedon: Thiefridge very stony fine sandy loam, rangeland, in a delineation of map unit 230. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 3.5 inches of undecomposed leaf litter.

Oi—0 to 1 inch; very dark brown (10YR 2/2) very stony slightly decomposed plant material, black (10YR 2/1) moist; moderate very thick platy and moderate medium and coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine and few fine tubular pores; 20 percent gravel, 15 percent cobbles, and 20 percent stones; slightly acid; abrupt wavy boundary.

A1—1 to 4 inches; very dark brown (10YR 2/2) very cobbly fine sandy loam, black (10YR 2/1) moist; moderate medium and coarse subangular blocky structure parting to moderate fine granular; soft, very friable, nonsticky and nonplastic; many very fine, many fine, common medium, and few coarse roots; many very fine and fine and few coarse interstitial pores; 15 percent gravel and 25 percent cobbles; slightly acid; abrupt wavy boundary.

A2—4 to 8 inches; very dark grayish brown (10YR 3/2) extremely cobbly sandy loam, black (10YR 2/1) moist; moderate medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine, common fine, common medium, and common coarse roots; common very fine and few fine tubular pores; 30 percent gravel and 30 percent cobbles; slightly acid; abrupt wavy boundary.

A3—8 to 12 inches; dark grayish brown (10YR 4/2) extremely cobbly sandy loam, black (10YR 2/1) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and

slightly plastic; common very fine and fine and many medium and coarse roots; common very fine and few fine tubular pores; 25 percent gravel and 35 percent cobbles; moderately acid; clear wavy boundary.

Bt—12 to 17 inches; brown (10YR 4/3) very cobbly sandy loam, very dark brown (10YR 2/2) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine, common fine, many medium, and many coarse roots; many very fine interstitial and tubular pores; few faint clay films on faces of peds and lining pores; 20 percent gravel and 25 percent cobbles; moderately acid; abrupt wavy boundary.

R—17 inches; hard fractured tuff.

Type location: Alpine County, California; on the Toiyabe National Forest about 1 mile east of Horsethief Canyon Creek; about 1,115 feet north and 1,075 feet east of the southwest corner of section 16, T. 11 N., R. 19 E.; USGS Woodfords 7.5 minute topographic quadrangle; 38 degrees, 48 minutes, 43.8 seconds north latitude and 119 degrees, 51 minutes, 29.3 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 50 to 54 degrees.

Mollic epipedon thickness: 14 to 20 inches, includes the Bt horizon.

Depth to bedrock: 14 to 20 inches to a lithic contact measured from the boundary between the Oi and A1 horizons.

Sodium fluoride pH: 8.5 to 9.5.

Particle-size control section:

Clay content—Averages 18 to 25 percent.

Rock fragments—Averages 35 to 60 percent, mainly cobbles. Lithology of fragments are volcanic rocks such as andesite.

A horizons:

Value—2 through 5 dry, 2 or 3 moist.

Chroma—1 or 2 moist.

Organic matter content—4 to 10 percent.

Reaction—Moderately acid to neutral.

Bt horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Texture—Very cobbly sandy loam or very gravelly sandy clay loam.

Clay content—18 to 27 percent.

Rock fragments—35 to 60 percent.

Organic matter content—2 to 4 percent.

Reaction—Moderately acid to neutral.

Toejom series

The Toejom series consists of shallow, excessively drained soils that formed in residuum and colluvium derived from granitic rock. Toejom soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Sandy-skeletal, mixed, mesic, shallow Typic Xerorthents

Typical pedon: Toejom very gravelly coarse sand, forestland, in a delineation of map unit 460. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 20 percent gravel, 10 percent cobbles, and 10 percent stones.

A1—0 to 2 inches; brown (10YR 5/3) very gravelly coarse sand, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 40 percent gravel, 5 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

A2—2 to 9 inches; grayish brown (10YR 5/2) very gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial pores; 50 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.

C—9 to 14 inches; light brownish gray (10YR 6/2) very gravelly coarse sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine and medium roots; many very fine interstitial pores; 50 percent gravel; slightly acid; clear wavy boundary.

Cr—14 to 20 inches; weathered granitic rock.

Type location: Mono County, California; on the Toiyabe National Forest about 2 miles southeast of the town of Walker; about 750 feet south and 850 feet west of the northeast corner of section 34, T. 8 N., R. 23 E.; USGS Chris Flat 7.5 minute topographic quadrangle; 38 degrees, 29 minutes, 53 seconds north latitude

and 119 degrees, 25 minutes, 54.2 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during fall, winter, and spring; dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 47 to 50 degrees.

Ochric epipedon thickness: 7 to 9 inches.

Depth to bedrock: 14 to 20 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rocks such as granodiorite.

Particle-size control section:

Clay content—Averages 3 to 8 percent.

Rock fragments—Averages 35 to 60 percent, mainly fine gravel (2 to 5 mm diameter). Lithology of fragments are granitic rocks such as granodiorite.

A horizons:

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

C horizon:

Value—6 or 7 dry, 4 or 5 moist.

Chroma—2 or 3, dry or moist.

Texture—Very gravelly coarse sand or very gravelly loamy coarse sand.

Clay content—3 to 8 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Toiyabe series

The Toiyabe series consists of shallow, excessively drained soils that formed in colluvium and residuum derived from granitic rock. Toiyabe soils are on mountains. Slopes are 8 to 75 percent. The mean annual precipitation is about 25 inches and mean annual temperature is about 42 degrees.

Taxonomic class: Mixed, frigid, shallow Typic Xeropsamments

Typical pedon: Toiyabe very bouldery loamy coarse sand, forestland, in a delineation of map unit 120. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 20 percent cobbles, 15 percent stones and 10 percent boulders and has about 2 inches of mainly undecomposed forest duff composed of pine needles.

A1—0 to 2 inches; dark grayish brown (10YR 4/2) very bouldery loamy coarse sand, very dark brown (10YR 2/2) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine tubular and interstitial pores; 25 percent gravel, 5 percent cobbles, 10 percent stones and 10 percent boulders; medium acid; abrupt smooth boundary.

A2—2 to 4 inches; dark grayish brown (10YR 4/2) very bouldery loamy coarse sand, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine and medium roots; many very fine and fine tubular and interstitial pores; 25 percent gravel, 5 percent cobbles, 10 percent stones and 10 percent boulders; medium acid; clear smooth boundary.

A3—4 to 9 inches; grayish brown (10YR 5/2) very bouldery loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine and medium roots; many very fine, fine and medium tubular and interstitial pores; 25 percent gravel, 5 percent cobbles, 10 percent stones and 10 percent boulders; medium acid; clear smooth boundary.

C—9 to 16 inches; pale brown (10YR 6/3) gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine and medium roots; many very fine, fine and medium tubular and interstitial pores; 20 percent gravel, 5 percent cobbles; medium acid; abrupt smooth boundary.

Cr—16 inches; weathered gray and white granodiorite.

Type location: Alpine County, California; on the Toiyabe National Forest about 1,000 feet northeast of Shingle Mill Flat; about 1,200 feet north and 1,600 feet west of the southeast corner of section 32, T. 11 N., R. 19 E.; USGS Woodfords 7.5 minute topographic quadrangle; 38 degrees, 46 minutes, 5.1 seconds north latitude and 119 degrees, 52 minutes, 2.9 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 43 to 47 degrees.

Mean summer soil temperature: 55 to 62 degrees.

Depth to bedrock: 10 to 20 inches to paralithic contact.

Control section:

Clay content—Averages 3 to 8 percent.

Rock fragments—Averages 15 to 35 percent.
Lithology of fragments is granitic rocks such as granodiorite.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.
Chroma—1 through 3, dry or moist.
Reaction—Medium acid or slightly acid.

C horizon:

Hue—10YR or 7.5YR.
Value—6 or 7 dry, 3 through 5 moist.
Chroma—2 or 3, dry or moist.
Texture—Gravelly loamy coarse sand, gravelly coarse sand, gravelly sand or gravelly loamy sand.

Torrifluventic Haploxerolls

Torrifluventic Haploxerolls consists of very deep, well drained soils that formed in alluvium derived from mixed sources. Torrifluventic Haploxerolls are on stream terraces. Slopes are 0 to 8 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 48 degrees.

Taxonomic class: Mesic Torrifluventic Haploxerolls

Reference pedon: Torrifluventic Haploxerolls extremely stony sandy loam, rangeland, in a delineation of map unit 920. (Colors are for dry soil unless otherwise noted). The surface is covered with 35 percent gravel, 25 percent cobbles, 15 percent stones and 3 percent boulders.

- A1—0 to 5 inches; dark grayish brown (10YR 4/2) extremely stony sandy loam, very dark brown (10YR 2/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine and medium roots; common very fine tubular and interstitial pores; 40 percent gravel, 20 percent cobbles, 20 percent stones; neutral; clear wavy boundary.
- A2—5 to 18 inches; grayish brown (10YR 5/2) extremely stony coarse sand, very dark grayish brown (10YR 3/2) moist; single grain; loose, nonsticky and nonplastic; common very fine, fine and medium roots; many very fine and fine interstitial pores; 40 percent gravel, 20 percent cobbles, 20 percent stones; neutral; clear wavy boundary.
- C—18 to 37 inches; light brownish gray (10YR 6/2) extremely stony coarse sand, grayish brown (10YR

5/2) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; 45 percent gravel, 15 percent cobbles; 25 percent stones; neutral.

2Ab—37 to 46 inches; grayish brown (10YR 5/2) extremely stony loamy coarse sand, very dark grayish brown (10YR 3/2) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; 45 percent gravel, 20 percent cobbles; 20 percent stones; neutral.

2C—46 to 60 inches; light brownish gray (10YR 6/2) extremely stony coarse sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; 40 percent gravel, 20 percent cobbles; 25 percent stones; neutral.

Type location: Mono County, California; about 2.6 miles south of Devils Gate; USGS Sweetwater Creek 7.5 minute topographic quadrangle; 38 degrees, 22 minutes, 41.7 seconds north latitude and 119 degrees, 11 minutes, 10.0 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually dry in the moisture control section, moist in winter and spring, dry in summer and fall;

Aridic moisture regime that borders on xeric.

Mean annual soil temperature: 47 to 50 degrees.

Mollic epipedon thickness: 10 to 18 inches.

Control section:

Clay content—3 to 18 percent.

Rock fragments—35 to 85 percent, mainly stones and cobbles. Lithology of fragments are mainly igneous rocks such as andesite and granodiorite.

A horizons:

Hue—7.5YR or 10YR.

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Slightly acid or neutral.

C horizons:

Hue—10YR or 2.5Y.

Value—6 through 8 dry, 4 or 5 moist.

Chroma—2 or 3, dry or moist.

Texture—Extremely stony loamy coarse sand to extremely stony fine sandy loam; some pedons have strata of very cobbly fine sandy loam to very stony coarse sand.

Rock fragments—35 to 85 percent.
 Organic matter content—0.25 to 0.5 percent.
 Reaction—Slightly acid or neutral.

Trespass series

The Trespass series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from mixed igneous rocks with surficial additions of eolian volcanic ash. Trespass soils are on stream terraces. Slopes are 0 to 4 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive Vitrandic Argicryolls

Typical pedon: Trespass gravelly ashy loam, rangeland, in a delineation of map unit 840. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel.

A—0 to 2 inches; dark gray (10YR 4/1) gravelly ashy loam, black (10YR 2/1) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and many fine roots; many very fine interstitial pores; 20 percent gravel; slightly acid; clear wavy boundary.

Bt1—2 to 12 inches; dark gray (10YR 4/1) very gravelly ashy sandy clay loam, black (10YR 2/1) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine and common medium roots; common very fine tubular and interstitial pores; few faint clay films on faces of peds and lining pores; 50 percent gravel; slightly acid; clear wavy boundary.

Bt2—12 to 20 inches; dark grayish brown (10YR 4/2) very gravelly sandy clay loam, very dark brown (10YR 2/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable; moderately sticky and slightly plastic; common very fine, common fine, and common medium roots; common very fine tubular and interstitial pores; common faint clay films on faces of peds and lining pores; 50 percent gravel; neutral; clear wavy boundary.

Bt3—20 to 25 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; hard, friable, moderately sticky and slightly plastic; common very fine, common fine, and common medium roots; common very fine tubular and interstitial pores; common distinct clay films on faces

of peds and lining pores; common fine and medium distinct dark yellowish brown (10YR 4/4) moist irregular masses of iron accumulation in the matrix; 40 percent gravel; neutral; clear wavy boundary.

Bt4—25 to 35 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine, few fine, and few medium roots; common very fine tubular and interstitial pores; common faint clay films on faces of peds and lining pores; common fine and medium distinct brown (7.5YR 4/4) moist irregular masses of iron accumulation in the matrix; 40 percent gravel; neutral; clear wavy boundary.

C—35 to 54 inches; brown (10YR 5/3) very gravelly sandy clay loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and few fine roots; common very fine tubular and interstitial pores; common fine and medium distinct brown (7.5YR 4/4) moist irregular masses of iron accumulation in the matrix; 55 percent gravel; neutral; clear wavy boundary.

Cg—54 to 60 inches; light gray (10YR 7/1) extremely gravelly coarse sandy loam, gray (10YR 5/1) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; few very fine roots; common very fine interstitial pores; 60 percent gravel and 5 percent cobbles; neutral.

Type location: Mono County, California; on the Toiyabe National Forest about 1 mile south of the Wheeler Guard Station on Wheeler Flat; about 700 feet north and 250 feet west of the southeast corner of section 27, T.6 N., R. 23 E.; USGS Fales Hot Springs 7.5 minute topographic quadrangle; 38 degrees, 19 minutes, 57.9 seconds north latitude and 119 degrees, 25 minutes, 48.0 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during fall, winter, and spring; dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 54 to 59 degrees.

Mollic epipedon thickness: 20 to 40 inches; includes the Bt horizons.

Depth to base of argillic horizon: 20 to 40 inches.

Particle-size control section:

Clay content—Averages 18 to 25 percent.

Rock fragments—Averages 35 to 50 percent, mainly gravel. Lithology of fragments are granitic rocks

such as granodiorite, volcanic rocks such as tuff or andesite, and minor metamorphic rocks such as quartzite.

A horizon:

Chroma—1 or 2, dry or moist.
Organic matter content—3 to 5 percent.
Reaction—Slightly acid or neutral.
Volcanic glass content—5 to 25 percent in the coarse silt through fine sand fractions.
Oxalate Al + 1/2 oxalate iron—0.2 to 0.4 percent.

Bt1 horizon:

Value—4 or 5 dry, 2 or 3 moist.
Chroma—1 or 2, dry or moist.
Texture—Very gravelly ashy sandy loam, very gravelly ashy loam, or very gravelly ashy sandy clay loam.
Clay content—18 to 25 percent.
Rock fragments—35 to 50 percent.
Organic matter content—2 to 4 percent.
Reaction—Slightly acid or neutral.
Volcanic glass content—5 to 25 percent in the coarse silt through fine sand fractions.
Oxalate Al + 1/2 oxalate iron—0.2 to 0.4 percent.

Bt2 horizon:

Value—4 or 5 dry, 2 or 3 moist.
Chroma—1 or 2, dry or moist.
Texture—Very gravelly sandy loam, very gravelly loam, or very gravelly sandy clay loam.
Clay content—18 to 25 percent.
Rock fragments—35 to 50 percent.
Organic matter content—2 to 4 percent.
Reaction—Slightly acid or neutral.

Bt3 and Bt4 horizons:

Chroma—2 or 3, dry or moist.
Texture—Very gravelly loam or very gravelly sandy clay loam.
Clay content—18 to 25 percent.
Rock fragments—35 to 50 percent.
Organic matter content—1 to 2 percent.
Reaction—Slightly acid or neutral.

C horizon:

Value—5 or 6 dry, 4 or 5 moist.
Chroma—2 or 3 dry or moist.
Texture—Very gravelly loam or very gravelly sandy clay loam.
Clay content—18 to 25 percent.
Rock fragments—35 to 50 percent.
Reaction—Slightly acid or neutral.

Cg horizon:

Value—6 or 7 dry, 5 or 6 moist.
Chroma—1 or 2, dry or moist.
Texture—Extremely gravelly coarse sandy loam or extremely gravelly sandy loam.
Clay content—12 to 20 percent.
Rock fragments—60 to 80 percent.

Vermdig series

The Vermdig series consists of very deep, somewhat poorly drained soils that formed in slope alluvium derived from andesite, tuff-breccia, and tuff. Vermdig soils are on mountains. Slopes are 2 to 8 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 40 degrees.

Taxonomic class: Fine-loamy, mixed, superactive Aquic Argicryolls

Typical pedon: Vermdig loam, rangeland, in a delineation of map unit 360. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 10 percent gravel.

A—0 to 2 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots; common very fine and fine interstitial pores; moderately acid; clear smooth boundary.

Bt1—2 to 8 inches; brown (7.5YR 5/3) gravelly sandy clay loam, dark brown (7.5YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine interstitial and tubular pores; few faint clay films bridging sand grains; many medium distinct brown (7.5YR 4/2) moist irregular zones of iron depletion; 20 percent gravel; moderately acid; clear smooth boundary.

Bt2—8 to 13 inches; brown (7.5YR 5/3) gravelly loam, dark brown (7.5YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine interstitial and tubular pores; few distinct clay films on faces of peds and lining pores; many medium distinct brown (7.5YR 4/2) moist irregular zones of iron depletion and few fine distinct brown (7.5YR 4/4) moist irregular masses of iron accumulation in the

matrix; 20 percent gravel; slightly acid; clear smooth boundary.

Bt3—13 to 32 inches; light brown (7.5YR 6/3) gravelly loam, dark brown (7.5YR 3/4) moist; moderate medium subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine interstitial and tubular pores; few distinct clay films on faces of peds and lining pores; common medium distinct brown (7.5YR 4/2) moist irregular zones of iron depletion; 20 percent gravel; slightly acid; clear smooth boundary.

Bt4—32 to 39 inches; light brown (7.5YR 6/3) gravelly clay loam, brown (7.5YR 4/3) moist; moderate fine and medium subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; few very fine and fine roots; common very fine interstitial and tubular pores; few distinct clay films on faces of peds and lining pores; common fine prominent strong brown (7.5YR 4/6) moist irregular masses of iron accumulation lining pores; 30 percent gravel; slightly acid; clear smooth boundary.

Bt5—39 to 60 inches; light brown (7.5YR 6/4) gravelly clay loam, brown (7.5YR 4/4) moist; moderate fine and medium subangular blocky structure; very hard, friable, very sticky and moderately plastic; few very fine and fine roots; common very fine interstitial and tubular pores; common distinct clay films on faces of peds and lining pores; common fine prominent strong brown (7.5YR 4/6) moist irregular masses of iron accumulation lining pores; 15 percent gravel; slightly acid.

Type location: Alpine County, California; on the Toiyabe National Forest about 0.5 mile west of Monitor Pass; about 2,000 feet south and 1,000 feet east of the northwest corner of section 36, T. 10 N., R. 21 E.; Heenan Lake USGS 7.5 minute topographic quadrangle; 38 degrees, 40 minutes, 19.2 seconds north latitude and 119 degrees, 37 minutes, 38.6 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry from July through early October; occasionally saturated in the upper 6 to 15 inches during March to May, commonly saturated within 40 inches and occasionally saturated within 30 inches of the surface March to July; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 52 to 59 degrees.

Mollic epipedon thickness: 10 to 16 inches.

Depth to base of argillic horizon: more than 60 inches.

Sodium fluoride pH: 8.5 to 9.0.

Particle-size control section:

Clay content—Averages 18 to 27 percent.

Rock fragments—Averages 15 to 35 percent, mainly pebbles. Lithology of fragments are volcanic rocks such as andesite, tuff-breccia, and tuff.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—1 to 3 percent.

Reaction—Moderately acid or slightly acid.

Bt1 and Bt2 horizons:

Hue—10YR or 7.5YR.

Chroma—2 or 3, dry or moist.

Texture—Gravelly sandy clay loam, gravelly sandy loam, or gravelly loam.

Clay content—18 to 25 percent.

Rock fragments—15 to 35 percent, dominantly pebbles.

Organic matter content—1 or 2 percent.

Reaction—Moderately acid or slightly acid.

Redoximorphic features—Redox concentrations occur as masses of iron or manganese accumulation in the matrix, and redox depletions occur as irregular zones of iron and manganese loss in the matrix.

Bt3, Bt4, and Bt5 horizons:

Hue—10YR or 7.5YR.

Chroma—3 or 4, dry or moist.

Texture—Gravelly sandy clay loam, gravelly clay loam, or gravelly loam.

Clay content—25 to 35 percent.

Rock fragments—15 to 35 percent, dominantly pebbles.

Reaction—Moderately acid or slightly acid.

Redoximorphic features—Redox concentrations occur as masses of iron or manganese accumulation in the matrix, and redox depletions occur as irregular zones of iron and manganese loss in the matrix.

Vetagrande series

The Vetagrande series consists of very deep, well drained soils that formed in colluvium and residuum derived from volcanic rocks. Vetagrande soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 15 inches and the mean annual temperature is about 44 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Pachic Argixerolls

Typical pedon: Vetagrande very gravelly sandy loam, rangeland, in adjacent Douglas County. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with about 45 percent pebbles.

A1—0 to 3 inches; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; common very fine tubular and interstitial pores; 55 percent pebbles; neutral (pH 6.6); clear wavy boundary.

A2—3 to 9 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; moderate very fine and fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine, common medium and few coarse roots; common very fine and fine tubular and interstitial pores; 55 percent pebbles; slightly acid (pH 6.5); clear wavy boundary.

Bt1—9 to 17 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; many very fine and fine and common medium roots; common very fine and fine tubular and interstitial pores; common faint clay bridges between sand grains; 5 percent cobbles and 35 percent pebbles; slightly acid (pH 6.5); clear wavy boundary.

Bt2—17 to 25 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; many very fine, common fine and few medium roots; common very fine tubular and interstitial pores; common faint and few distinct clay bridges on sand grains; 45 percent pebbles; slightly acid (pH 6.5); clear wavy boundary.

Bt3—25 to 34 inches; light yellowish brown (10YR 6/4) very gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak medium and coarse subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; common very fine and few fine roots; common very fine tubular and interstitial pores; common faint clay bridges on sand grains; 5 percent cobbles and 50 percent pebbles; slightly acid (pH 6.4); clear wavy boundary.

Bt4—34 to 60 inches; light yellowish brown (10YR 6/4) very gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; massive; hard, very friable, moderately sticky and moderately plastic; few very

fine roots; common very fine tubular and interstitial pores; few faint clay bridges on sand grains; 5 percent cobbles and 50 percent pebbles; slightly acid (pH 6.4).

Type location: Douglas County, Nevada; in the Pine Nut Mountains about 2.5 miles east of Carters Station; about 100 feet north and 900 feet east of the southwest corner of section 1, T. 11 N., R. 21 E.; USGS Double Spring 7.5 minute topographic quadrangle; 38 degrees, 50 minutes, 21 seconds north latitude and 119 degrees, 35 minutes, 01 second west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in winter and spring, dry from July through October; Aridic moisture regime that borders on xeric.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 20 to 30 inches, includes the Bt1 and Bt2 horizons.

Depth to base of argillic horizon: More than 60 inches.

Depth to bedrock: 60 to 80 inches to a paralithic contact.

The paralithic materials below the contact are weathered volcanic rocks such as andesitic tuff.

Reaction: Slightly acid or neutral.

Particle-size control section:

Clay content—18 to 27 percent.

Rock fragments—35 to 60 percent, mainly medium and coarse gravel. Lithology of rock fragments are volcanic rocks such as rhyolite or andesite.

Sand content—Less than 40 percent medium sand through very coarse sand.

A horizon:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 or 3 percent.

Bt1 and Bt2 horizons:

Hue—10YR or 7.5YR.

Texture—Very gravelly sandy clay loam or very gravelly sandy loam.

Clay content—18 to 27 percent.

Rock fragments—35 to 60 percent.

Consistence—Hard or very hard dry, very friable or friable moist.

Organic matter content—1 or 2 percent.

Bt3 and Bt4 horizons:

Hue—10YR or 7.5YR.

Chroma—3 or 4, dry or moist.

Texture—Very gravelly sandy clay loam or very gravelly sandy loam.

Clay content—18 to 27 percent.

Rock fragments—35 to 60 percent.

Structure—Subangular blocky but may be massive in some pedons.

Consistence—Hard or very hard dry, very friable or friable moist.

Vetash series

The Vetash series consists of very deep, well drained soils that formed in colluvium derived from volcanic rock with surficial additions of eolian volcanic ash. Vetash soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 44 degrees.

Taxonomic class: Ashy-skeletal, glassy, frigid Vitrandic Argixerolls

Typical pedon: Vetash very gravelly ashy sandy loam, rangeland, in a delineation of map unit 872. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 40 percent gravel.

A1—0 to 3 inches; brown (10YR 5/3) very gravelly ashy sandy loam, dark brown (10YR 3/3) moist; weak thick platy structure parting to moderate fine granular; soft, very friable, slightly sticky and nonplastic; many very fine roots; many very fine interstitial pores; 55 percent gravel; slightly acid; clear smooth boundary.

A2—3 to 9 inches; grayish brown (10YR 5/2) very gravelly ashy sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and many fine roots; common very fine tubular and interstitial pores; 45 percent gravel; slightly acid; clear wavy boundary.

Bt1—9 to 17 inches; brown (10YR 5/3) very gravelly ashy sandy clay loam, dark brown (10YR 3/3) moist; moderate medium and coarse subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; common very fine and common fine roots; common very fine tubular and interstitial pores; common faint clay films bridging sand grains and few distinct clay films coating faces of peds and lining pores; 50 percent gravel; slightly acid; clear wavy boundary.

Bt2—17 to 30 inches; brown (10YR 5/3) very gravelly ashy sandy clay loam, dark brown (10YR 3/3) moist; moderate medium and coarse subangular blocky structure; slightly hard, very friable, moderately sticky

and moderately plastic; common very fine and common fine roots; common very fine tubular and interstitial pores; common faint clay films bridging sand grains and few distinct clay films on faces of peds and lining pores; 50 percent gravel; slightly acid; clear wavy boundary.

Bt3—30 to 46 inches; light yellowish brown (10YR 6/4) very gravelly ashy sandy clay loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; few very fine and few fine roots; common very fine tubular and interstitial pores; common faint clay films on faces of peds and lining pores; 55 percent gravel; slightly acid; clear wavy boundary.

C—46 to 60 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; 50 percent gravel and 5 percent cobbles; neutral.

Type location: Mono County, California; on the Toiyabe National Forest about 3 miles southwest of Masonic Town Site; about 700 feet south and 1,300 feet west of the northeast corner of section 31, T. 6 N., R. 26 E.; USGS Bridgeport 7.5 minute topographic quadrangle; 38 degrees, 19 minutes, 48.9 seconds north latitude and 119 degrees, 09 minutes, 26.5 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; dry from July through early October for 75 to 90 consecutive days in the four months following the summer solstice; Xeric moisture regime that borders on aridic.

Mean annual soil temperature: 44 to 47 degrees.

Mollic epipedon thickness: 20 to 30 inches; includes the Bt1 and Bt2 horizons.

Depth to bedrock: 60 to 80 inches to a paralithic contact. The paralithic materials below the contact are weathered andesite or tuff.

Volcanic glass content: 35 to 60 percent in coarse silt through fine sand fractions.

Particle-size control section:

Clay content—Averages 18 to 27 percent.

Rock fragments—Averages 35 to 60 percent, mainly gravel. Lithology of fragments is volcanic rock such as andesite or tuff.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.
 Chroma—2 or 3, dry or moist.
 Organic matter content—2 to 4 percent.
 Reaction—Slightly acid or neutral.

Bt1 and Bt2 horizons:

Hue—10YR or 7.5YR.
 Value—4 or 5 dry, 2 or 3 moist.
 Chroma—2 or 3, dry or moist.
 Texture—Very gravelly ashy sandy loam, very gravelly ashy sandy clay loam, or very gravelly ashy loam.
 Clay content—18 to 27 percent.
 Rock fragments—35 to 60 percent.
 Organic matter content—1 to 3 percent.
 Reaction—Slightly acid or neutral.

Bt3 horizon:

Hue—10YR or 7.5YR.
 Value—5 or 6 dry, 4 or 5 moist.
 Chroma—3 or 4, dry or moist.
 Texture—Very gravelly ashy sandy clay loam or very gravelly ashy loam.
 Clay content—20 to 27 percent.
 Rock fragments—35 to 60 percent.

Waterpeak series

The Waterpeak series consists of very deep, somewhat excessively drained soils that formed in colluvium and residuum derived from granitic rock. Waterpeak soils are on mountains. Slopes are 4 to 75 percent. The mean annual precipitation is about 30 inches and the mean annual temperature is about 37 degrees.

Taxonomic class: Sandy-skeletal, mixed Pachic Haplocryolls

Typical pedon: Waterpeak very bouldery coarse sand, rangeland, in a delineation of map unit 210. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 25 percent gravel, 5 percent stones, and 5 percent boulders.

A1—0 to 5 inches; dark grayish brown (10YR 4/2) very bouldery coarse sand, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; common very fine interstitial pores; 25 percent gravel, 5 percent cobbles, 5 percent stones, and 5 percent boulders; slightly acid; clear wavy boundary.

A2—5 to 18 inches; brown (10YR 5/3) very stony coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and common fine roots; common very fine interstitial and tubular pores; 25 percent gravel and 20 percent stones; slightly acid; clear wavy boundary.

A3—18 to 27 inches; brown (10YR 5/3) very stony loamy coarse sand, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine, common fine, and common medium roots; common very fine interstitial and tubular pores; 25 percent gravel, 5 percent cobbles, and 20 percent stones; neutral; clear wavy boundary.

Bw—27 to 60 inches; pale brown (10YR 6/3) very stony sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, few fine, and few medium roots; common very fine interstitial and tubular pores; 20 percent gravel, 5 percent cobbles, and 20 percent stones; neutral.

Type location: Alpine County, California; on the Toiyabe National Forest about 1,100 feet southeast of Waterhouse Peak; about 1,850 feet south and 1,700 feet east of the northwest corner of section 26, T. 11 N., R. 18 E.; USGS Freel Peak 7.5 minute topographic quadrangle; 38 degrees, 46 minutes, 22.1 seconds north latitude and 119 degrees, 57 minutes, 45.7 seconds west longitude, NAD 27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 47 to 54 degrees.

Mollic epipedon thickness: 20 to 40 inches.

Depth to base of cambic horizon: More than 40 inches.

Depth to bedrock: 60 to 80 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rock.

Control section:

Clay content—Averages less than 10 percent.

Rock fragments—Averages 35 to 60 percent, mainly stones. Lithology of fragments are granitic rocks such as granodiorite.

A horizons:

Value—4 or 5 dry, 2 or 3 moist.
 Chroma—2 or 3, dry or moist.
 Organic matter content—2 to 5 percent.

Reaction—Slightly acid or neutral.

Bw horizon:

Chroma—3 or 4, dry or moist.

Texture—Very stony sandy loam or very stony coarse sandy loam.

Clay content—10 to 15 percent.

Rock fragments—35 to 60 percent.

Reaction—Slightly acid or neutral.

Wetbag series

The Wetbag series consists of very deep, poorly drained and very poorly drained soils that formed in alluvium derived from tuff, tuff-breccia, and andesite. Wetbag soils are on fan remnants and low stream terraces. Slopes are 0 to 8 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Fine, smectitic Vertic Cryaquolls

Typical pedon: Wetbag peaty silt loam, rangeland, in a delineation of map unit 310. (Colors are for moist soil unless otherwise noted.)

A1—0 to 2 inches; very dark brown (10YR 2/2) peaty silt loam, very dark grayish brown (10YR 3/2) dry; moderate fine granular structure; hard, friable, moderately sticky and moderately plastic; many very fine and common fine and medium roots; many very fine interstitial pores; neutral; clear wavy boundary.

A2—2 to 6 inches; black (10YR 2/1) clay, very dark gray (10YR 3/1) dry; moderate fine and medium subangular blocky structure; hard, firm, very sticky and very plastic; many very fine and common fine and medium roots; many very fine and common fine tubular pores; common fine faint very dark gray (2.5Y 3/1) irregular zones of iron depletion and common fine prominent brown (7.5YR 4/4) irregular masses of iron accumulation in the matrix; 5 percent gravel; neutral; clear wavy boundary.

Btg—6 to 15 inches; very dark gray (2.5Y 3/1) clay, gray (2.5Y 5/1) dry; moderate fine subangular blocky structure; slightly hard, firm, very sticky and very plastic; common very fine and many fine and medium roots; common very fine and fine tubular pores; few faint clay films lining pores; few fine prominent brown (7.5YR 4/4) irregular masses of iron accumulation in the matrix; 5 percent gravel; neutral; clear wavy boundary.

Btssg1—15 to 26 inches; 60 percent black (N 2.5/0) and 40 percent dark gray (2.5Y 4/1) clay, 60 percent dark

gray (N 4/0) and 40 percent gray (2.5Y 6/1) dry; moderate fine subangular blocky structure; hard, friable, very sticky and very plastic; common very fine through medium roots; many very fine and common fine tubular pores; few slickensides; few faint clay films lining pores; few fine prominent dark yellowish brown (10YR 4/6) irregular masses of iron accumulation in the matrix; 5 percent gravel; neutral; clear wavy boundary.

Btssg2—26 to 46 inches; 75 percent dark gray (2.5Y 4/1) and 25 percent gray (2.5Y 5/1) clay, 75 percent gray (2.5Y 5/1) and 25 percent gray (2.5Y 6/1) dry; moderate fine and medium angular blocky structure; hard, friable, very sticky and very plastic; common very fine and few fine and medium roots; few slickensides; common pressure cutans on faces of peds and few faint clay films lining pores; common fine and medium prominent dark yellowish brown (10YR 4/6) irregular masses of iron accumulation in the matrix and few fine prominent pale green (5G 6/2) irregular zones of iron depletion in the matrix; 2 percent gravel; neutral; clear wavy boundary.

B'tg—46 to 60 inches; 60 percent dark gray (2.5Y 4/1) and 40 percent dark yellowish brown (10YR 4/4) clay, 60 percent gray (2.5Y 5/1) and 40 percent light yellowish brown (10YR 6/4) dry; weak fine and medium angular blocky structure; hard, friable, very sticky and very plastic; few very fine and fine roots; common very fine tubular and interstitial pores; common pressure cutans on faces of peds; common fine prominent greenish gray (5G 6/1) and few fine black (N 2.5/0) irregular zones of iron depletion within the matrix; areas with dark yellowish brown color are very coarse irregular masses of iron accumulation in the matrix; 10 percent gravel; neutral.

Type location: Alpine County, California; on the Toiyabe National Forest in Bagley Valley about 1.5 miles south of Heenan Lake; about 350 feet north and 1,500 feet west of the southeast corner of section 15, T. 9 N., R. 21 E.; USGS Wolf Creek 7.5 minute topographic quadrangle; 38 degrees, 37 minutes, 14.8 seconds north latitude and 119 degrees, 39 minutes, 11.4 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually saturated in some part of the moisture control section during winter, spring, and early summer, usually dry in some part summer and fall; seasonal periods of aquic moisture regime from November through June during saturation with

ground water and anaerobic conditions; Aquic moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Mean summer soil temperature: 55 to 59 degrees.

Mollic epipedon thickness: 20 to 40 inches.

Depth to seasonal aquic conditions: 0 to 20 inches.

Particle-size control section:

Clay content—Averages 35 to 50 percent.

Rock fragments—Averages 0 to 15 percent, mainly pebbles. Lithology of fragments are volcanic rocks such as tuff, tuff-breccia, and andesite.

A1 horizon:

Hue—10YR or neutral (N).

Value—3 or 4 dry, 2 or 3 moist.

Chroma—0 (if hue is Neutral) through 2, dry or moist.

Organic matter content—10 to 15 percent.

Reaction—Slightly acid or neutral.

Redoximorphic features—Redox concentrations occur as masses of iron or manganese accumulation in the matrix; redox depletions may occur as zones of iron or manganese removal in the matrix.

A2 horizon:

Hue—10YR or neutral (N).

Value—2 or 3 moist, 3 or 4 dry.

Chroma—0 (if hue is Neutral) through 2, moist or dry.

Organic matter content—5 to 8 percent.

Reaction—Slightly acid or neutral.

Btg horizon:

Hue—10YR, 2.5Y, or neutral (N).

Value—2 or 3 moist, 4 or 5 dry.

Chroma—0 (if hue is Neutral) through 2, moist or dry.

Texture—Clay or clay loam.

Rock fragments—0 to 15 percent, dominantly pebbles.

Organic matter content—2 to 4 percent.

Reaction—Slightly acid or neutral.

Btssg1 horizon:

Hue—10YR, 2.5Y, or neutral (N).

Value—2 through 4 moist, 4 through 6 dry.

Chroma—0 (if hue is Neutral) through 2, moist or dry.

Texture—Clay or clay loam.

Rock fragments—0 to 15 percent, dominantly pebbles.

Organic matter content—1 or 2 percent.

Reaction—Slightly acid or neutral.

Redoximorphic features—Redox concentrations occur as masses of iron or manganese accumulation in the matrix; redox depletions may occur as zones of iron or manganese removal in the matrix.

Btssg2 and B'tg horizons:

Hue—10YR, 2.5Y, or neutral (N).

Value—2 through 4 moist, 4 through 6 dry.

Chroma—0 (if hue is Neutral) through 2, moist or dry.

Texture—Clay or clay loam.

Rock fragments—0 to 15 percent, dominantly pebbles.

Reaction—Slightly acid or neutral.

Redoximorphic features—Redox concentrations occur as masses of iron or manganese accumulation in the matrix; redox depletions may occur as zones of iron or manganese removal in the matrix.

Whittell series

The Whittell series consists of moderately deep, excessively drained soils that formed in colluvium over residuum derived from granodiorite. The Whittell soils are on mountainflanks. Slopes range from 8 to 75 percent. The mean annual precipitation is about 40 inches and the mean annual air temperature is about 35 degrees.

Taxonomic class: Sandy-skeletal, mixed Typic Cryorthents

Typical pedon: Whittell very cobbly loamy coarse sand, forestland, in a delineation of map unit 111. (Colors are for dry soil unless otherwise noted.) The surface is covered with 15 percent gravel, 10 percent cobbles, 15 percent stones and 10 percent boulders.

Oi—0 to 1 inch; slightly decomposed plant material.

A—1 to 7 inches; dark grayish brown (10YR 4/2) very cobbly loamy coarse sand, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, medium, coarse and very coarse roots throughout; 25 percent gravel, 25 percent cobbles, 5 percent stones; strongly acid; clear smooth boundary.

Bw1—7 to 25 inches; pale brown (10YR 6/3) very stony loamy coarse sand, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine and many medium, coarse and very coarse roots throughout; 25 percent gravel, 15 percent cobbles and 15 percent stones; strongly acid; clear smooth boundary.

Bw2—25 to 39 inches; pale brown (10YR 6/3) extremely stony loamy coarse sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine and common fine, medium and coarse roots

throughout; 25 percent gravel, 15 percent cobbles, 25 percent stones; strongly acid; clear wavy boundary.
Cr—39 inches; Moderately cemented granodiorite bedrock.

Type location: Mono County, California; on the Toiyabe National Forest about 3 miles north of Twin Lakes; about 100 feet north and 350 feet west of the southeast corner of section 18, T. 4 N., R. 24 E.; USGS Twin Lakes 7.5 minute topographic quadrangle; 38 degrees, 11 minutes, 49.6 seconds north latitude and 119 degrees, 21 minutes, 37.2 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter, and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 35 to 41 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Ochric epipedon thickness: 3 to 9 inches.

Depth to bedrock: 20 to 40 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rock such as granodiorite.

Particle-size control section:

Clay content—Averages 1 to 8 percent.

Rock fragments—Averages 35 to 85 percent.

Lithology of fragments are granitic rocks such as granodiorite.

A horizon:

Value—4 through 5 dry; 2 or 3 moist.

Chroma—2 or 3 dry or moist.

Organic matter content—1 to 4 percent.

Reaction—Strongly acid to slightly acid.

Bw horizons:

Value—4 through 6 dry; 3 through 5 moist.

Chroma—3 or 4 dry or moist.

Texture—Loamy coarse sand.

Clay content—1 to 8 percent.

Rock fragments—35 to 85 percent.

Reaction—Strongly acid to slightly acid.

C horizon:

Hue—2.5Y or 10YR.

Value—5 or 6 dry; 3 or 4 moist.

Chroma—3 through 6 dry or moist.

Texture—Loamy coarse sand.

Clay content—1 to 8 percent.

Rock fragments—35 to 85 percent.

Reaction—Strongly acid to slightly acid.

Windyridge series

The Windyridge series consists of very shallow, somewhat excessively drained soils that formed in residuum and colluvium derived from granodiorite. Windyridge soils are on mountains. Slopes are 8 to 30 percent. The mean annual precipitation is about 45 inches and the mean annual temperature is about 35 degrees.

Taxonomic class: Sandy-skeletal, mixed, shallow Typic Cryorthents

Typical pedon: Windyridge very gravelly loamy coarse sand, rangeland, in a delineation of map unit 820. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 65 percent gravel, 5 percent cobbles, and 2 percent stones.

A—0 to 2 inches; brown (10YR 5/3) very gravelly loamy coarse sand, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common fine roots; many very fine interstitial pores; 50 percent gravel; very strongly acid; clear wavy boundary.

Bw—2 to 7 inches; brownish yellow (10YR 6/6) very gravelly loamy coarse sand, dark yellowish brown (10YR 4/6) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine interstitial and few very fine tubular pores; 50 percent gravel; very strongly acid; clear wavy boundary.

C—7 to 10 inches; very pale brown (10YR 7/4) very gravelly coarse sand, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 50 percent gravel; very strongly acid; clear wavy boundary.

Cr—10 to 20 inches; soft weathered granodiorite.

Type location: Alpine County, California; on the Toiyabe National Forest about 2,100 feet southwest of Jobs Sister; about 1,900 feet north and 3,000 feet east of the southwest corner of section 31, T. 12 N., R. 19 E.; USGS Freel Peak 7.5 minute topographic quadrangle; 38 degrees 51 minutes 28.5 seconds north latitude and 119 degrees 53 minutes 19.7 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section; moist fall, winter and spring; usually dry July through early October; Xeric moisture regime.

Mean annual soil temperature: 35 to 40 degrees.

Mean summer soil temperature: 44 to 47 degrees.

Depth to bedrock: 4 to 10 inches to a paralithic contact.

The paralithic materials below the contact are weathered granitic rock such as granodiorite.

Particle-size control section:

Clay content—Averages less than 10 percent.

Rock fragments—Averages 35 to 60 percent, mainly fine gravel. Lithology of rock fragments is granitic rocks such as granodiorite.

Reaction—Very strongly acid through moderately acid.

A horizon:

Value—5 or 6 dry, 3 or 4 moist.

Chroma—2 or 3 dry, 3 or 4 moist.

Organic matter content—1 or 2 percent.

Bw horizon:

Value—6 or 7 dry, 4 or 5 moist.

Chroma—3 through 6, dry or moist.

Texture—Very gravelly loamy coarse sand or very gravelly coarse sand.

Clay content—4 to 10 percent.

Rock fragments—35 to 60 percent, mainly fine (2 to 5 millimeter diameter) gravel.

C horizon:

Value—6 or 7 dry, 4 or 5 moist.

Chroma—3 through 6, dry or moist.

Texture—Very gravelly loamy coarse sand or very gravelly coarse sand.

Clay content—4 to 10 percent.

Rock fragments—35 to 60 percent, mainly fine (2 to 5 millimeter diameter) gravel.

Wolfcut series

The Wolfcut series consists of very deep, well drained soils that formed in colluvium and slope alluvium derived from mixed sources. Wolfcut soils are on fan remnants.

Slopes are 8 to 30 percent. The mean annual precipitation is about 25 inches and the mean annual temperature is about 42 degrees.

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Ultic Palexeralfs

Typical pedon: Wolfcut very stony loam, forestland, in a delineation of map unit 410. (Colors are for dry soil unless otherwise noted.) The soil surface is covered

with 20 percent gravel, 15 percent cobbles, and 3 percent stones.

Oi—0 to 1 inch; slightly decomposed plant material composed of fibrous needle litter.

A—1 to 4 inches; dark grayish brown (10YR 4/2) very stony loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; common very fine roots; common very fine tubular pores; 15 percent gravel, 10 percent cobbles, and 10 percent stones; slightly acid; clear smooth boundary.

AB—4 to 11 inches; dark grayish brown (10YR 4/2) extremely stony sandy clay loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine through coarse roots; common very fine tubular and interstitial pores; 45 percent gravel, 10 percent cobbles, and 10 percent stones; slightly acid; clear wavy boundary.

Bt1—11 to 19 inches; grayish brown (10YR 5/2) extremely gravelly sandy clay loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine through coarse roots; common very fine tubular and interstitial pores; common faint clay films on faces of peds and lining pores; 50 percent gravel, 10 percent cobbles, and 10 percent stones; slightly acid; clear wavy boundary.

Bt2—19 to 30 inches; brown (10YR 5/3) extremely gravelly sandy clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common very fine through coarse roots; common very fine tubular and interstitial pores; common faint clay films on faces of peds and lining pores; 50 percent gravel, 10 percent cobbles, and 10 percent stones; slightly acid; clear wavy boundary.

Bt3—30 to 42 inches; brown (10YR 5/3) extremely gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, moderately sticky and moderately plastic; few very fine and common fine through coarse roots; common very fine tubular and interstitial pores; common faint clay films on faces of peds and lining pores; 55 percent gravel, 10 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

Bt4—42 to 60 inches; brown (10YR 5/3) extremely gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few

very fine through coarse roots; common very fine tubular and interstitial pores; few faint clay bridges on sand grains; 55 percent gravel, 10 percent cobbles, and 5 percent stones; slightly acid.

Type location: Alpine County, California; on the Toiyabe National Forest about 3 miles south of Wolf Creek Meadows; about 500 feet south and 2,100 feet west of the northeast corner of section 18, T. 8 N., R. 21 E.; USGS Wolf Creek 7.5 minute topographic quadrangle; 38 degrees, 32 minutes, 34.5 seconds north latitude and 119 degrees, 42 minutes, 29.9 seconds west longitude, NAD27.

Range in Characteristics:

Soil moisture: Usually moist in the moisture control section during late fall, winter, and spring; usually dry from July through early October; Xeric moisture regime.

Mean annual soil temperature: 44 to 47 degrees.

Umbric epipedon thickness: 10 to 15 inches.

Depth to base of argillic horizon: More than 60 inches.

Sodium fluoride pH: 9.0 to 10.5.

Particle-size control section:

Clay content—Averages 18 to 27 percent.

Rock fragments—Averages 60 to 80 percent.

Lithology of fragments are mainly volcanic rocks such as tuff, tuff-breccia, and andesite, with lesser amounts of granitic rocks such as granodiorite.

A and AB horizons:

Value—4 or 5 dry, 2 or 3 moist.

Chroma—2 or 3, dry or moist.

Organic matter content—2 to 4 percent.

Reaction—Moderately acid or slightly acid.

Bt horizons:

Hue—10YR or 7.5YR.

Value—5 or 6 dry, 4 or 5 dry.

Chroma—2 through 4, dry or moist.

Texture—Extremely gravelly sandy clay loam, extremely gravelly loam, or extremely gravelly sandy loam.

Clay content—18 to 27 percent.

Rock fragments—60 to 80 percent.

Reaction—Moderately acid or slightly acid.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils as rangeland and forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited*, *somewhat limited*, and *very limited*. The suitability ratings are expressed as *well suited*, *moderately suited*, *poorly suited*, and *unsuited* or as *good*, *fair*, and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes. The land capability classification is described in United States Department of Agriculture Handbook 210, Land-capability Classification (11).

In the capability system, soils are generally grouped at three levels=capability class, subclass, and unit.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, e, w, s, or c, to the class numeral, for example, 2e. The letter e shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; w shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); s shows that the soil is limited mainly because it is shallow, droughty, or stony; and c, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by w, s, or c because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in all soil surveys.

The capability classification of map units in this survey area is given in the section "Detailed Soil Map Units" and in Table 5, "Land Capability Classification".

Rangeland and Forest Land Resource Management

Angela Mushrush, Rangeland Management Specialist, Natural Resource Conservation Service, prepared this section.

Rangeland, within this report, is considered a "kind of land" rather than a particular kind of land use. Rangeland and forest land provide many important resource values, acting as vast watersheds, providing habitat for wildlife, offering forage to livestock and wildlife, providing commodity and non-commodity wood products, and space and beauty for recreational pursuits. The resource values of rangeland and forest land are intricately related to each other and are often directly affected by land management actions. Because of the interrelation between resources, it is appropriate that rangeland managers consider all resource values when planning range improvements. The following discussions on land management include comments on how resource values are affected by these management actions.

About 93 percent of the land in the survey area is rangeland. Livestock grazing is the principle agricultural use of the rangeland. Livestock operations are mostly cow-calf or cow-calf-sheep. Ranches are a few hundred acres to several thousand acres in size. They rely heavily on permitted grazing use of public lands. Most of the rangelands within the survey area are administered by the United States Forest Service. Mining has been the major industrial use of rangelands in the survey area and has played an important role in the history of this area.

During the mining booms of the late 1800's, herds of cattle, sheep, oxen, horses, and burros, were brought to Mono and Alpine Counties to power and feed the mining communities. Heavy grazing pressure during these boom-periods depleted native stands of forage over much of the survey area.

No published studies have yet fully documented the impact of livestock grazing or estimated the time required for heavily grazed areas to recover to pre-grazing levels of plant diversity, density, and cover. The rarity of undisturbed reference sites and long-term studies makes it difficult to quantify the effects of

grazing. Where the disturbance has been most severe, palatable shrubs have generally been replaced by less desirable shrubs and many native perennial grasses and forbs have been eliminated and replaced by alien or introduced annual grasses and forbs. Recovery has been most evident where previous abuses were limited or at higher elevations with greater precipitation. It is axiomatic that the greater the level of deterioration, the longer the period of recovery is for native plant communities. It is important to recognize that although present day rangeland production and plant diversity in the survey area is generally less than what is potentially achievable, the overall health or condition of rangelands in the survey area today is improved from what was commonplace in the early 1900's.

Good rangeland management can improve present range condition and productivity, while preventing accelerated erosion. Proper management of rangeland is dependent upon many factors: season of grazing use; the kind of grazing animal; the intensity and distribution of grazing; and the range resource potential are important management considerations. Multiple use management of rangelands to meet present and future needs requires extensive knowledge of the range resource capabilities and limitations. An understanding of the dynamics of native plant communities and the properties of associated soils is fundamental in applying ecological principals to rangeland evaluation and management.

Soil-Site Correlation

Landscapes are divided into basic units for study, evaluation, and management. On rangelands and forest lands, these units are called ecological sites. During the course of this soil survey, range and forest ecological sites were correlated to soils identified within the survey area. These correlations are based on our present understanding of soil-plant-climate relationships in the survey area. Soil properties, such as rooting depth and texture, that affect moisture supply and plant nutrients

have the greatest influence on the productivity of range plants, although topographic position is also an important factor. Climatic relationships to vegetation and soils are accounted for in the classification of soils and in soil mapping criteria. In areas that have similar climate and topography, differences in the kind and amount of vegetation produced on rangelands are closely related to the type of soil. Dominant ecological sites can be determined from soil maps and map unit legends developed for the survey area.

An ecological site is a distinctive kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation. An ecological site is the product of all environmental factors responsible for its development. It can support a native plant community typified by an association of species that differs from the potential plant community of other ecological sites in the kind or proportion of species or in total production. Disturbances such as drought, fire, grazing by native fauna, or insect and disease damage are recognized as natural factors in the development of native plant communities.

Ecological Site Descriptions

Table 6, "Rangeland Ecological Sites, Productivity and Characteristic Vegetation" shows each soil, both major and minor, while including the ecological site; the common plant name and scientific plant symbol for the characteristic vegetation; the average percent composition for each species in the potential plant community; and the total annual production of vegetation in favorable, normal, and unfavorable years. The characteristic vegetation, made up of the grasses, forbs, trees, or shrubs of the potential plant community for each soil, are listed by common name. Under composition, the expected percentage of the total annual production is given for each species making up the characteristic vegetation.

Total potential production is the amount of vegetation that can be expected to grow annually on well managed rangeland or forest land that is supporting the potential natural community. Total production includes all vegetation, whether or not it is palatable to grazing animals. It does not include the increase in stem diameter of trees and shrubs.

A more detailed description of each ecological site, identified by number, can be obtained at the local NRCS Service Center.

Rangeland and Forest Land Management

Rangeland management requires knowledge of the kinds of soils and the potential plant communities these soils can support in a given area. A state and transition model will be used to describe vegetation dynamics and management interactions associated with each ecological site. The model provides a method to organize and communicate complex information about vegetation response to disturbances and management. A state includes one or more biological (including soil) communities that occur on a particular ecological site and that are functionally similar with respect to soil/site stability, hydrologic function, and biotic integrity. States are generally distinguished by relatively large differences in plant functional groups, dynamic soil properties, and ecosystem processes, and consequently in vegetation structure, biodiversity, and management requirements. They are also distinguished by their responses to disturbance. A number of different plant communities may be included in a state, and the communities are often connected by community pathways.

Shifts between states are referred to as "transitions". Unlike community pathways, these "threshold" transitions are not reversible by simply altering the intensity or direction of factors that produced the change. Transitions among states in an ecological site are often caused by a combination of feedback mechanisms that alter soil and plant community dynamics.

The reference state is the state where the functional capacities represented by soil/site stability, hydrologic function, and biotic integrity are performing at a near optimum level under the natural disturbance regime. The reference state is used for the rangeland health evaluation, although managers may choose to manage communities in another state.

Three assessment tools, similarity index, trend, and rangeland health evaluations, can be used to evaluate a rangeland site. Similarity index is an index of where the current plant community is in relation to the historic climax plant community, or to a desired plant community that is one of the site's potential vegetation states. Trend is a determination of the direction of change in the current plant community and associated soils in relation to the historic climax plant community or some other desired plant community. Rangeland health is defined as the degree to which the integrity of the soil, vegetation, water, and air as well as the ecological processes of the rangeland ecosystem are balanced and sustained. A rangeland health assessment is designed

to provide a preliminary evaluation of soil/site stability, hydrologic function, and integrity of the biotic community. This assessment can also provide early warnings of potential problems and opportunities.

Managing a forest to produce forage for livestock and wildlife, desired wildlife habitat, quality water, quality fisheries, timber production, and many other desired forest products requires an understanding of the forest ecosystem and how it responds to the manager's decisions.

In most forests, solar energy is the major ecological component affected in the management process. Solar energy is intercepted by the canopy of the tallest trees. This causes a filtering or reduction of solar energy as it penetrates to the next layer of vegetation, whether it is a midstory of woody plants or grasses and forbs growing on the forest floor. Managing the forest ecosystem for the desired plant community and the desired production is, in a large part, accomplished by managing the plant populations in the different stories (overstory, midstory, and understory) to provide the most efficient use of solar energy by the desired plants.

One of the primary factors leading to poor tree health is too many trees closely spaced. Thinning, the selective removal of individual trees, is an important management practice that improves tree health and vigor and decreases wildfire potential.

Vegetation Zones of Alpine and Mono Counties, California

Alpine and Mono counties are in the northwestern portion of the Basin and Range Physiographic Province and the east slope of the Sierra Nevada Province (4). Major plant associations within the soil survey area typify the general zonation of vegetation common to the Great Basin Region (3). These counties have a wide variety of vegetation zones because of the extensive variety of rock types, associated climatic zones, and wide range of elevations. Valley floors and lower piedmont slopes are dominated by sagebrush-grass plant communities, indicative of the Montane Zone. The Pygmy Conifer Zone occurs above the 9 inch precipitation zone and includes juniper woodlands and above 11 inches of precipitation are pinyon woodlands. The higher elevations of the mountain ranges include both Montane and Alpine Zones. These zones include montane shrublands dominated by mountain big sagebrush, low sagebrush, and high conifer forest communities of Jeffrey pine, lodgepole pine, white and red fir, western white pine, whitebark pine, and limber pine. The Alpine

Zone consists of a variety of high elevation forbs and grasses. Small aspen stands are common at springs, in concave areas that receive additional moisture, and along perennial streams. Meadows are common in the survey area and are primarily associated with springs and seeps. Important riparian systems within the survey area include the Carson and Walker Rivers.

Pygmy Conifer Zone

The Pygmy Conifer Zone includes singleleaf pinyon and western juniper plant communities that are prevalent at intermediate elevations from approximately 6000 feet. Average annual precipitation ranges from 10 to 16 inches. The major occurrences of pinyon-juniper woodlands are in the Sweetwater Range. Dominant understory shrubs include mountain big sagebrush, mountain mahogany and mountain snowberry. Prevalent understory grasses are western needlegrass, Indian ricegrass, big squirreltail, Sandberg's bluegrass, and muttongrass. Stringer meadows occur along spring-fed stream channels. Meadow vegetation also occurs on the periphery of seeps and springs.

Wet meadows adjacent to sagebrush stands are important sage grouse brood-rearing areas. The diet of sage grouse chicks during the first weeks after leaving the nest is primarily insects (ants and beetles) and succulent forbs that are common to wet meadows. Cattle grazing of meadow areas can improve the quality of sage grouse feed if a period of re-growth for key forb species is provided. Grazing increases the succulence of forbs by arresting the maturation process of plant tissues. The succulent or young leaf tissue is higher in protein and lower in fiber than mature tissue. Sage grouse have been shown to seek sources of succulent forbs by selecting for meadows grazed by cattle. Sage grouse chicks benefit from the horizontal and vertical cover provided by properly grazed meadows that appear "patchy" in terms of stubble heights remaining after livestock use.

Improper livestock grazing management of riparian vegetation can cause gully erosion that results in lowered water tables, drying out of meadows, and loss of valuable wildlife and livestock forage. Grazing management strategies should be applied that are sensitive to the development and maintenance of healthy riparian areas.

During the mining booms of the late 1800's, much of Mono and Alpine Counties woodland resource was harvested for use in ore processing, as mine props, or burned as domestic firewood. Large portions of the pinyon-juniper woodland in Mono County were harvested and therefore support trees less than 150 years of age, representing re-growth after the early

mining boom period. In these woodland areas that were harvested, there are trees younger than 150 years, but the old ax-cut stumps show that the site historically supported woodland. Settlement in the survey area has also reduced the incidence and size of natural fires through fire suppression and the disruption of fine fuel continuity by livestock grazing. With changes in the extent and frequency of natural fire, significant changes in the character of pinyon-juniper woodlands and associated rangelands have occurred. Original woodlands that were not harvested for the mining industry have become denser and adjacent sagebrush-grass communities have been invaded by these conifers. In the pristine environment, stands of pinyon and juniper woodland were restricted to very rocky soils and landscape positions that prevented naturally occurring wildfires. Young pinyon and juniper trees are very susceptible to ground fires until their crowns grow well above the sagebrush-grass vegetation. Fire usually eliminates or greatly reduces the number of tree seedlings on soils that produce continuous stands of fine fuels. Production of fine fuels is restricted on soils that are droughty, shallow and/or stony. A sparse stand of fine fuels reduces the frequency and extent of wildfires and provides "safe" sites for stands of pinyon and juniper to develop.

Traditional products of the pinyon-juniper woodlands include firewood, fence posts, pine nuts and Christmas trees. As energy demands and costs increase, firewood harvesting becomes more important as a woodland product. Other woodland uses are livestock grazing, wildlife food and cover, recreation, and watershed values. Managing pinyon and juniper woodland for sustained yield is a relatively new concept. Pinyon and juniper wood is not suitable for lumber and commercial tree production management techniques have not generally been applied to these woodlands in the past. Conversion of pinyon-juniper woodlands to rangeland has been the trend in the past, and several satisfactory conversion methods have been developed. Because of the recent (and growing) demand for firewood, however, management of these woodlands should include evaluations of the economic value of firewood production and harvest as well as livestock grazing. Thinning and improvement cuttings are recommended for sustained yields. Harvest of selected trees for fence posts and firewood can provide an economic return and improve stand quality and yield. Thinning and selective tree harvest maintains an open overstory canopy that can optimize understory forage production while allowing more vigorous growth of the remaining trees. Tree production should be encouraged on sites known to be productive or on soils that originally supported pinyon-juniper woodland. Invasion of pinyon or juniper into

sagebrush-grass rangelands should be controlled to prevent loss of forage production and potential degradation of the rangeland resource. When developing a woodland management plan, it is important to evaluate the soil and site potentials. Consideration should be given to all woodland values, site opportunities and economic factors. Understory vegetation consists of grasses, forbs, shrubs, and other plants. Some woodland, if well managed, can produce enough understory vegetation to support grazing of livestock or wildlife, or both, without damage to the trees or understory. The quantity and quality of understory vegetation vary with the kind of soil, the age and kind of trees in the canopy, the density of the canopy, the amount of litter accumulation and level of tree competition for soil moisture and nutrients. Areas where there is presently a heterogeneous mix of vegetative types including grassland, low shrub, tall shrub and tree/shrub communities usually provide an optimum diversity of habitat and wildlife. These types of vegetative complexes are common in the mid- and upper elevation sagebrush-grass communities within the survey area. In these areas, moderate browsing by cattle on antelope bitterbrush in the fall can encourage a shrub form that leaves more of the bitterbrush plant available for use by mule deer and pronghorn antelope, as well as enhancing bitterbrush vigor and production.

Montane Zone

The Montane Zone is dominated by shrublands and high elevation conifer forests, occurring at elevations from approximately 7,500 to 10,300 feet. Average annual precipitation at these elevations is from 16 to over 50 inches. Sagebrush-grass plant communities within the survey area are represented in the mid-elevation valleys and mountains. Mountain big sagebrush, and to a lesser extent, low and silver sagebrush dominate the soil survey area. Perennial grasses are potentially the dominant herbaceous vegetation of sagebrush-grass plant communities. Species of needlegrass, needleandthread, Indian ricegrass, spike fescue, big squirreltail, and Sandberg bluegrass are important grasses associated with sagebrush communities. Livestock pressure on these sagebrush-grass plant communities has historically been severe. These plant communities are usually first to initiate growth or "greenup" with warming temperatures in the early spring and have traditionally been used for spring grazing by livestock. However, close grazing by livestock at this time, season after season, will eventually eliminate the perennial grass and forb understory.

Grazing management practices, such as periodic rest during critical growth in the spring, rotational use, and the control of intensity and season of use can enhance the long-term productivity of these sagebrush-grass communities. Fences, herding, water hauling, and control of livestock access to watering facilities can be used to achieve better distribution of grazing use and to facilitate grazing management of these areas. There are very few perennial water sources within the sagebrush-grass zone. Water developments and watering facilities, therefore, are a key element to grazing management and can be of significant value for wildlife. Where range condition has not deteriorated too far, and an adequate population of desirable perennial grasses and forbs are available to respond to a release from competition, brush management practices can greatly enhance the forage available for livestock and wildlife. The occurrence of years having below normal precipitation is relatively frequent at lower elevations of the sagebrush-grass communities and the risk of seeding failure because of the unpredictability of climate should be acknowledged.

Brush management practices can be very effective in increasing native forage production on sites in the mid-elevation sagebrush-grass zones. Brush management practices that are implemented primarily to benefit livestock can also be important to wildlife. Opening up large, homogeneous stands of sagebrush is often advantageous to wildlife, such as mule deer, elk and pronghorn antelope. Rangeland seeding may be required following removal of woody vegetation where desirable understory plants are sparse or absent in the present plant community. Forage for wildlife, such as pronghorn antelope, mule deer, and sage grouse can be enhanced if adapted forbs are included in the seeding.

At elevations between 6,000 to 9,000 feet, within this Zone are plant associations of Jeffrey pine, lodgepole pine, white fir and Western juniper. The subalpine forest communities are dominated by whitebark pine, limber pine, red fir, western white pine and lodgepole pine. Currant, mountain snowberry, and mountainmahogany are common understory shrub species. Understory grasses include muttongrass, sedges, western needlegrass, big squirreltail and Sandberg bluegrass. There are also several plant species of concern occurring in this zone. Small aspen patches occur at springs and along perennial streams. Aspen stands also occur in avalanche chutes.

Fires of the past were important to the evolution of the Jeffrey pine forest. Precipitation is critical for trees to remain vigorous, which increases resistance to insects and pathogens. During drought conditions, tree resistance is significantly reduced. The effects of drought and increased insect activity are noticeable throughout the Montane Zone. Densely overstocked conditions have resulted because of the cessation of frequent burning in the Jeffrey pine forests. This has resulted in slow growth and poor vigor, which makes the dominant trees highly vulnerable to mortality in epidemics of insects and diseases. Large acreages of beetle-caused mortality have been documented in pinyon pine, ponderosa pine, white fir and limber pine (9).

Alpine Zone

The Alpine Zone consists of rugged, partially vegetated terrain with snowfields and rocky ridges above the natural treeline. Elevations range from 10,300 to 11,918 feet. Average annual precipitation is from 40 to 55 inches. The Alpine Zone is characterized by high winds, low temperatures, low effective moisture and short growing seasons. Alpine communities are structurally simple with few plant species compared to lower elevation vegetation zones. Alpine vegetation generally occurs in a mosaic of small patches with widely differing environmental conditions because of very small changes in topography. Vegetative cover is primarily herbaceous with minor amounts of tree and shrub cover. Tree species occurring in this zone are limber pine and whitebark pine. These trees are either stunted by snow pack or grow in a krummholz form due to high winds. Common perennial forbs include Indian paintbrush, buckwheat, coyote mint, Sierra podistera, penstemon, and draba. Perennial grasses and grass-like plants include pine needlegrass, skyline bluegrass, timberline bluegrass, mat muhly, Sandberg bluegrass, spike fescue, Ross' sedge, rock oniongrass and big squirreltail. Annual plants are rare in this zone and usually are only a few inches tall.

Alpine communities are sensitive to disturbance, and the effects of human disturbances are more drastic and long-lasting than in other vegetation zones. Vegetation recovery is slow because of the cold and extreme temperatures, high winds, prolonged snow cover, and intense ultraviolet radiation. Fire occurs infrequently in the Alpine Zone and fire size is small, sometimes limited to a single tree.

Wildlife Considerations

In assessing the impact of the manipulation of vegetation on wildlife it is important to consider the role "edges" play in wildlife habitat. An "edge" or ecotone is a transition between plant communities or where vegetative structure within plant communities comes together. These edges are commonly richer in wildlife than either of the adjoining communities. The structure and dominance of plants that remain after manipulation of vegetation differ with the treatment method used. Fire totally removes all vegetation including the skeletons or woody portions of shrubs and thus eliminates the structure of woody vegetation from the area treated. Prescription burning may enhance habitat for a number of wildlife species. Mule deer, antelope, and many non-game species select recently burned areas for feeding. Brush treatments using herbicides leave the dead skeletons of shrubs and the shrub structure is retained. Antelope usually avoid areas having this dead shrub structure for several years after treatment. Herbicide control of shrubs may also kill broad-leaved forbs in the shrub understory which are a staple part of the diet of sage grouse and antelope. Chaining, and to a lesser degree, brush beating, change the vegetative structure from tree/shrub or shrub to grassland and the residue left on the ground creates microhabitat for small mammals. Manipulation of sagebrush within sage grouse occupied ranges must be undertaken with careful planning. Optimum nesting habitat for sage grouse is characterized by a 20 to 40 percent crown cover of sagebrush that is less than 30 inches high. Some treatment of sagebrush, such as reducing cover from 40 to 20 percent may not seriously degrade sage grouse nesting habitat and can often provide higher quality sage grouse forage.

More than half of all wildlife species in the survey area are dependent upon riparian plant communities for a significant portion of the year. Riparian communities also support wildlife not common to desert ecosystems. Riparian communities are also important as islands of habitat in desert environments for migrating birds. Species such as nuthatches and warblers which nest in forest ecosystems can be found in desert riparian zones during the spring and fall. These communities are concentration areas not only for wildlife, but also recreational users, livestock and feral horses.

Reducing big sagebrush cover can benefit mule deer where the habitat needs of these animals are properly identified and planned for in the manipulation of vegetation. Removal of big sagebrush to enhance the diversity of understory grasses and forbs or to increase production of green forage on transitional range where shrub cover is excessive can benefit mule deer. The sage grouse is a habitat-specific bird, relying primarily on

sagebrush to meet its life requirements. Plans for manipulation of sagebrush stands on ranges occupied by sage grouse should provide for the maintenance of suitable sage grouse habitat, especially nesting habitat near strutting grounds or "leks".

Wildlife Considerations in the Pygmy Conifer Zone

Pinyon-juniper woodlands provide shelter and forage for numerous species of wildlife, some of which may be obligate to these woodlands such as pinyon mice and woodrats. These forests have value as habitat for several large mammals such as mule deer, bighorn sheep, wild horses, mountain lions, and bears. Gray foxes, bobcats, coyotes, weasels, skunks, and badgers search for prey here. Many species of birds find food and shelter here. The quantity and variety of species using the pinyon-juniper woodlands changes with succession.

Non-game wildlife species associated with these woodlands are the bushy-tailed woodrat, the blue-grey gnat-catcher, Clark nutcracker, mountain chickadee, pinyon jay, and the American kestrel. Mule deer will also use these woodland communities for thermal cover and many species of small mammals and birds are associated with the juniper woodlands within the survey area. Brush treatments such as chainings in these pinyon-juniper areas can greatly benefit wildlife. By opening up some of the pinyon-juniper encroached areas understory grasses and forbs can be released. In areas with complete canopy cover range seeding may be necessary to have successful chaining results. These chained areas make great habitat for mule deer, small mammals and birds.

Wildlife Considerations in the Montane Zone

Although sagebrush-grass communities may provide transitional range in the spring to pronghorn antelope moving from winter to summer ranges, plant communities dominated by big sagebrush are not heavily used by pronghorns. Livestock water developments are beneficial to wildlife, especially deer and antelope, if the water supply is available when they occupy the area. Sage grouse may use these areas during severe winter periods to feed on sagebrush that has not been snow-covered. Heavy snow at higher elevations will move chukar partridge onto these communities where feed is available. Low elevation sagebrush-grass communities within the survey area are used primarily by mule deer and feral horses as winter range or as transitional range in the spring. Spring grazing by livestock on deer winter range areas should be managed so that turn out of livestock is delayed until after spring green-up and most of the deer have migrated from the area.

Stringer meadows occur along spring-fed stream channels in the sagebrush zone. Meadow vegetation also occurs on the periphery of seeps and springs. Improper livestock grazing management of riparian vegetation can cause gully erosion that results in lowered water tables, drying out of meadows, and loss of valuable wildlife and livestock forage. Grazing management strategies should be applied that are sensitive to the development and maintenance of healthy riparian areas.

Conifer forests supply mule deer and bighorn sheep with exceptional summer range. Mule deer and bighorn sheep will use these high elevation sites from early in the spring when the snow melts to early winter when snow begins to accumulate. These areas have more than sufficient feed and cover for deer. Bighorn sheep are usually found near steep rocky slopes and cliffs free of dense brush. The high elevation basins also support many small mammal and bird species. The Montane Zone provides valuable breeding habitat for the flammulated owl, an insectivorous, cavity-nesting, neotropical migrant.

There tends to be much diversity at these high elevations since there is an increased amount of precipitation. Seedlings in this zone are not usually needed as there is usually a sufficient seed source available after any type of disturbance.

Wildlife Considerations in the Alpine Zone

Alpine communities are essentially vertical islands. Wildlife living at high elevations must be able to cope with high winds, cold temperatures and desiccation, since little precipitation originates from rainfall and it quickly drains. During mid-day, overheating can be a problem for alpine wildlife species (5). Alpine communities provide habitat for birds, such as blue grouse, rufous hummingbirds, and mountain bluebirds small mammals, such as pika, Belding's ground squirrels and mountain pocket gophers; and large mammals such as bighorn sheep. Snowfields, melting through the season, create a gradient of plant phenology that provides an extended supply of nutritious forage for herbivores that migrate to higher elevations, such as bighorn sheep.

Rehabilitation of Disturbed Habitats

Establishment and growth of native plants is a naturally slow process, and disturbance makes these conditions even more severe. Natural recovery is thus extremely slow and does not necessarily result in plant communities that resemble pre-disturbance conditions. Rehabilitation efforts by seeding or transplanting may

help mitigate many of these negative impacts and speed recovery.

The success of revegetation depends on the amount of moisture available during the growing season. Even in areas where adapted species are planted and improved seeding and land treatment techniques are applied, the success of revegetation is strongly influenced by rainfall. The distribution and amount of precipitation in the survey area fluctuate widely from one year to the next. Years of below normal precipitation are relatively frequent, and the risk of seeding failure caused by the unpredictability of climate should be acknowledged in addition to critical soil properties that affect seeding success. Removal of seeds by rodents and harvester ants may also severely limit seedling establishment.

Where critical area treatment is necessary, providing a plant cover that helps to prevent accelerated erosion may be advantageous on soils that are poorly suited to range seeding. Containerized-plantings of native species can be used to provide nurse and seed plants for the disturbed areas.

Other information regarding management, plant communities, wildlife, and revegetation discussed in this survey can be obtained by contacting the local Natural Resource Conservation Service, www.nv.nrcs.usda.gov, or the local Cooperative Extension office, www.unce.unr.edu.

Forest Productivity and Management

The tables in this publication can help forest owners or managers plan the use of soils for wood production. They show the potential productivity of the soils for wood production and rate the soils according to limitations that affect forest management.

In table 7, Forest Productivity, the potential productivity of merchantable or common trees on a soil is expressed as a site index and as a volume number. The site index's the average height, in feet, that dominant and co-dominant trees of a given species attain in a specified number of years. For pinyon and juniper woodland, site index is based on tree basal area per acre. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," (10) which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The volume of wood fiber, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand. Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest. In Mono and Alpine Counties, California, pinyon and juniper are common native trees, typically growing on steep mountains and hills. The pinyon and juniper areas are not harvested for commercial wood products, although firewood and fence posts are locally important uses of pinyon and juniper. Higher elevation tree species such as, lodgepole pine, Jeffrey pine, white fir, red fir, western white pine, and western juniper are the most common native trees. These species can be harvested for commercial wood products.

Forest Management

In tables 8 through 12, interpretive ratings are given for various aspects of forest management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified forest management practice (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low*, *moderate*, and *high*.

Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils for forest management practices. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet (<http://nssc.nssc.nrcs.usda.gov/nfm/>).

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including

revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance; and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the

surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development and construction materials. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for septic tank absorption fields; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the "Glossary."

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 14, 15, and 16 show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited*

indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or

cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Tables 17 and 18 show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately

favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water

contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed

landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Tables 19 and 20 give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table ENG-1, only the likelihood

of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good*, *fair*, or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

The soils are rated *good*, *fair*, or *poor* as potential sources of topsoil, reclamation material, and roadfill. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant

growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Water Management

Tables 21 and 22 provide information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; aquifer-fed excavated ponds; and various irrigation systems. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *No limitations* indicate that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Limitations* with ratings between 0 and 1 can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Limitations with a rating value of 1 indicate that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal

fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Sprinkler irrigation systems vary in shape, size, and design depending on the needs of the crop grown and the soil type. These systems can be used on a wider range of soils than can border systems. Most sprinkler systems can be used on slopes of as much as 15 percent. Ponding, surface erodibility, and depth to a cemented pan or bedrock typically limit design and performance.

Drip (or trickle) irrigation systems are very efficient and are most economical for wide-spaced crops, such as trees and vines. Slope generally is not a limitation, and the

movement of water through the soil can be controlled by the application rate. Soil texture, movement of water through the soil, surface coarse fragments, and available water capacity are less limiting with these systems than with other irrigation systems.

Furrow irrigation systems are some of the oldest irrigation methods. They require efficient management. A furrow is a small, shallow channel that is installed down the slope or across the slope of a field. The length of the furrow should be determined by soil type and slope.

Furrows extending downslope contribute to soil erosion. Soil texture, erodibility, and depth to a cemented pan or bedrock typically limit performance and affect maintenance.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features listed in tables are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 23 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (2) and the system adopted by the American Association of State Highway and Transportation Officials (1).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in table R.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The

sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical and Chemical Properties

Physical Properties

Table 24 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils. The physical characteristics and features related to soil erosion are also shown in Table 26, "Erosion Properties of Soils."

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In table J1b/J1c, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In table J1b/J1c, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table J1b/J1c, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $\frac{1}{3}$ or $\frac{1}{10}$ -bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (Ksat) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (Ksat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at

1/3- or **1/10-**bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 24, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table J1b/J1c as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per

acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 25 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is

affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

Water Features

Table 27 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A.—Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B.—Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C.—Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D.—Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil.

Table K1 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression.

Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table K1 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal

weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 28 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of

drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

Ablation till. Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

AC soil. A soil having only an A and a C horizon.

Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Arroyo. The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in alluvium.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low.....	3 to 6
Moderate	6 to 9
High.....	9 to 12
Very high	more than 12

Back slope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Badland. Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.

Bajada. A broad alluvial slope extending from the base of a mountain range out into a basin and formed by coalescence of separate alluvial fans.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Basal till. Compact glacial till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. The steep and very steep broken land at the border of an upland summit that is dissected by ravines.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of

erosion. It can improve the habitat for some species of wildlife.

Butte. An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Caliche. A more or less cemented deposit of calcium carbonate in soils of warm-temperate, subhumid to arid areas. Caliche occurs as soft, thin layers in the soil or as hard, thick beds directly beneath the solum, or it is exposed at the surface by erosion.

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Canyon. A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps. Very small, irregular terraces on steep hillsides, especially in pasture, formed by the trampling of cattle or the slippage of saturated soil.

Cement rock. Shaly limestone used in the manufacture of cement.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Cirque. A semicircular, concave, bowl-like area that has steep faces primarily resulting from glacial ice and snow abrasion.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Congeliturbate. Soil material disturbed by frost action.

Conglomerate. A coarse grained, clastic rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coppice dune. A small dune of fine grained soil material stabilized around shrubs or small trees.

Coprogenous earth (sedimentary peat). Fecal material deposited in water by aquatic organisms.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cuesta. A hill or ridge that has a gentle slope on one side and a steep slope on the other; specifically, an upward movement of the underlying sediments or that remains after finer particles have been removed by running water or the wind.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to

asymmetric, homoclinal ridge capped by resistant rock layers of slight or moderate dip.

Culmination of the mean annual increment (CMAI).

The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delta. A body of alluvium having a surface that is nearly flat and fan shaped; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Desert pavement. On a desert surface, a layer of gravel or larger fragments that was emplaced by

those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized: excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Draw. A small stream valley that generally is more open and has broader bottom land than a ravine or gulch.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact glacial till. The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Esker. A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.
meltwater. Many deposits are interbedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai. Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Glacial drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial
ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Head out. To form a flower head.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not

frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2.....	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluv. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame. An irregular, short ridge or hill of stratified glacial drift.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Ksat. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at 1/3 or 1/10 bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mesa. A broad, nearly flat topped and commonly isolated upland mass characterized by summit widths that are more than the heights of bounding erosional scarps.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from

about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permafrost. Layers of soil, or even bedrock, occurring in arctic or subarctic regions, in which a temperature below freezing has existed continuously for a long time.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually

in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth).

Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0

Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100.

Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^+ to $\text{Ca}^{++} + \text{Mg}$. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material

in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy (laminated)*, *prismatic (vertical axis of aggregates longer than horizontal)*, *columnar (prisms with rounded tops)*, *blocky (angular or subangular)*, and *granular*.

Structureless soils are either single grain (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand*, *loamy sand*, *sandy loam*, *loam*, *silt loam*, *silt*, *sandy clay loam*, *clay loam*, *silty clay loam*, *sandy clay*, *silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich

in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

TABLES

TABLE 1.--Temperature and Precipitation

(Recorded in the period 1961-90 at Twin Lakes, California)

Month	Temperature (Degrees F.)						Precipitation (Inches)				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have--		Average number of growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.01 inch or more	Average snow fall
				Maximum temperature higher than	Minimum temperature less than			less than	more than		
January---	39.4	17.2	28.3	60	-6	4	8.27	3.21	12.52	8	65.4
February--	40.1	17.2	28.7	60	-4	3	6.82	2.29	10.55	8	69.2
March----	40.8	18.3	29.6	61	-3	6	6.78	3.32	9.77	10	80.3
April-----	46.4	22.8	34.6	67	0	33	4.06	1.56	6.16	8	38.3
May-----	53.6	29.8	41.7	73	10	124	2.03	0.74	3.11	4	13.7
June-----	62.8	37.6	50.2	79	22	306	1.16	0.42	1.85	2	2.1
July-----	70.6	43.7	57.2	81	29	508	0.61	0.11	1.07	1	0.0
August----	70.1	43.5	56.8	82	30	499	0.99	0.16	1.83	1	0.2
September-	64.1	39.0	51.5	78	23	341	1.38	0.31	2.39	2	1.2
October---	55.9	31.7	43.8	74	13	171	2.82	0.75	4.64	4	10.5
November--	44.2	23.7	34.0	65	2	27	7.03	2.54	10.76	8	47.1
December--	39.5	18.3	28.9	59	-5	7	7.20	1.78	11.49	8	62.0
Yearly:	---	---	---	---	---	---	---	---	---	---	---
Average	52.3	28.6	40.4	---	---	---	---	---	---	---	---
Extreme	89	-17	---	83	-10	---	---	---	---	---	---
Total	---	---	---	---	---	2,028	49.15	32.94	61.83	64	390.0

Average number of days per year with at least 1 inch of snow on the ground: 80

*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F.)

TABLE 1.--Temperature and Precipitation

(Recorded in the period 1961-90 at Woodfords, California)

Month	Temperature (Degrees F.)						Precipitation (Inches)				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have--		Average number of growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.01 inch or more	Average snow fall
				Maximum temperature higher than	Minimum temperature less than			less than	more than		
January---	44.2	22.5	33.3	63	-2	27	3.64	1.20	5.64	5	18.4
February--	48.1	25.2	36.6	66	2	45	3.22	0.73	5.18	4	15.8
March-----	51.4	27.6	39.5	70	9	83	2.41	0.85	3.70	5	18.0
April-----	58.1	31.3	44.7	78	14	177	1.05	0.32	1.78	2	6.1
May-----	67.1	38.6	52.9	86	21	404	0.80	0.27	1.41	2	2.0
June-----	76.8	45.9	61.3	93	29	622	0.64	0.20	1.18	1	0.0
July-----	84.9	52.4	68.6	95	38	881	0.42	0.16	0.87	1	0.0
August----	83.5	51.8	67.6	94	37	851	0.67	0.17	1.44	1	0.0
September-	75.7	44.7	60.2	89	28	598	0.86	0.32	1.62	2	0.0
October---	65.5	37.4	51.4	84	18	364	1.50	0.46	2.54	3	1.1
November--	51.7	28.8	40.3	71	8	105	3.44	1.14	5.34	5	10.8
December--	45.0	23.4	34.2	63	1	32	3.26	0.78	5.42	4	17.1
Yearly:	---	---	---	---	---	---	---	---	---	---	---
Average	62.6	35.8	49.2	---	---	---	---	---	---	---	---
Extreme	98	-17	---	96	-5	---	---	---	---	---	---
Total	---	---	---	---	---	4,191	21.93	15.56	27.79	35	89.3

Average number of days per year with at least 1 inch of snow on the ground: 49

*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F.)

TABLE 2.--FREEZE DATES IN SPRING AND FALL
(Recorded in the period 1961-90 at Twin Lakes, California)

Probability	Temperature		
	24 degrees F. or lower	28 degrees F. or lower	32 degrees F. or lower
Last freezing temperature in spring:			
1 year in 10 later than--	June 15	July 6	July 20
2 years in 10 later than--	June 8	June 29	July 13
5 years in 10 later than--	May 25	June 15	June 29
First freezing temperature in fall:			
1 yr in 10 earlier than--	September 11	August 30	August 10
2 yrs in 10 earlier than--	September 20	September 7	August 18
5 yrs in 10 earlier than--	October 6	September 22	September 1

TABLE 2.--FREEZE DATES IN SPRING AND FALL
(Recorded in the period 1961-90 at Woodfords, California)

Probability	Temperature		
	24 degrees F. or lower	28 degrees F. or lower	32 degrees F. or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 15	June 1	June 22
2 years in 10 later than--	May 9	May 26	June 15
5 years in 10 later than--	April 27	May 14	May 31
First freezing temperature in fall:			
1 yr in 10 earlier than--	October 2	September 23	September 10
2 yrs in 10 earlier than--	October 9	October 1	September 17
5 yrs in 10 earlier than--	October 24	October 16	September 29

TABLE 3.--GROWING SEASON
(Recorded in the period 1961-90 at Twin Lakes, California)

Probability	Daily Minimum Temperature during growing season		
	Higher than 24 degrees F.	Higher than 28 degrees F.	Higher than 32 degrees F.
	<u>Days</u>	<u>Days</u>	<u>Days</u>
9 years in 10	97	73	31
8 years in 10	109	82	42
5 years in 10	132	99	63
2 years in 10	155	116	84
1 year in 10	167	125	95

TABLE 3.--GROWING SEASON
(Recorded in the period 1961-90 at Woodfords, California)

Probability	Daily Minimum Temperature during growing season		
	Higher than 24 degrees F.	Higher than 28 degrees F.	Higher than 32 degrees F.
	<u>Days</u>	<u>Days</u>	<u>Days</u>
9 years in 10	154	123	94
8 years in 10	162	134	103
5 years in 10	179	154	120
2 years in 10	196	174	137
1 year in 10	205	185	146

TABLE 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Alpine County	El Dorado County	Mono County	Total	
					Area	Extent
		Acres	Acres	Acres	Acres	Pct
100	Lithnip-Hawkinspeak-Rock outcrop complex, 30 to 75 percent slopes-----	11,399	---	1,554	12,953	2.0
101	Lithnip-Rock outcrop-Fishsnooze complex, 30 to 75 percent slopes-----	14,736	---	50,898	65,634	9.9
102	Lithnip-Rock outcrop-Fishsnooze complex, 8 to 30 percent slopes-----	1,396	---	7,319	8,715	1.3
103	Lithnip-Meiss-Hawkinspeak association-----	1,685	---	---	1,685	0.3
110	Jobsis-Whittell-Rock outcrop complex, 8 to 30 percent slopes-----	490	---	1,142	1,632	0.2
111	Whittell-Jobsis-Rock outcrop complex, 30 to 75 percent slopes-----	6,407	---	21,437	27,844	4.2
112	Jobsis-Whittell-Rock outcrop complex, cool, 8 to 30 percent slopes-----	814	2	---	816	0.1
113	Whittell-Jobsis-Rock outcrop complex, cool, 30 to 75 percent slopes-----	4,561	2	---	4,563	0.7
120	Toiyabe-Corbett-Rock outcrop complex, 30 to 50 percent slopes-----	31,761	---	3,529	35,290	5.3
121	Toiyabe-Corbett-Rock outcrop complex, 8 to 30 percent slopes-----	1,383	---	417	1,800	0.3
122	Toiyabe-Corbett-Rock outcrop complex, 50 to 75 percent slopes-----	---	---	2,286	2,286	0.3
130	Sofgran-Klauspeak-Temo association-----	11,209	---	---	11,209	1.7
131	Sofgran-Temo-Shalgran association-----	15,394	---	97	15,491	2.3
132	Sofgran-Temo-Rock outcrop association-----	---	---	5,194	5,194	0.8
140	Temo-Dagget-Rock outcrop complex, 30 to 75 percent slopes-----	997	---	---	997	0.2
150	Mottskel very bouldery loamy coarse sand, 2 to 15 percent slopes-----	1,031	---	---	1,031	0.2
160	Hopeval complex, 2 to 8 percent slopes-----	1,082	---	901	1,983	0.3
162	Hopeval-Corralval complex, 0 to 4 percent slopes-----	523	---	901	1,424	0.2
170	Burnlake-Roadcat association-----	8,775	---	---	8,775	1.3
171	Stumpatil-Morscour association-----	1,299	---	---	1,299	0.2
172	Stumpatil very gravelly sandy loam, 30 to 50 percent slopes-----	---	---	708	708	0.1
173	Stumpatil very gravelly sandy loam, 8 to 30 percent slopes-----	---	---	3,220	3,220	0.5
174	Stumpatil-Sonorapass-Snowtell association----	---	---	640	640	*
180	Shalgran-Rock outcrop complex, 30 to 75 percent slopes-----	1,962	---	---	1,962	0.3
190	Hopeval complex, 0 to 2 percent slopes-----	1,467	---	1,449	2,916	0.4
200	Cavebear-Hopeval complex, 2 to 8 percent slopes-----	2,131	---	138	2,269	0.3
210	Waterpeak-Rock outcrop complex, 30 to 75 percent slopes-----	297	17	608	922	0.1
211	Waterpeak-Buggin-Rock outcrop association----	130	---	1,233	1,363	0.2
212	Waterpeak-Sofgran-Temo association-----	---	---	951	951	0.1
220	Hardtil-Alpineco-Rock outcrop complex, 8 to 30 percent slopes-----	2,758	---	---	2,758	0.4
221	Hardtil-Alpineco-Rock outcrop complex, 30 to 75 percent slopes-----	1,507	---	---	1,507	0.2
222	Hardtil-Alpineco-Rock outcrop complex, warm, 8 to 30 percent slopes-----	---	---	2,762	2,762	0.4
230	Hawkinspeak-Thiefride-Angelwhine association----	4,640	---	14,695	19,335	2.9
231	Hawkinspeak association-----	1,680	---	1,176	2,856	0.4
232	Hawkinspeak-Hawkridge association-----	2,328	---	2,527	4,855	0.7
233	Hawkinspeak-Angelwhine-Hawkridge association----	---	---	3,301	3,301	0.5
234	Hawkinspeak-Thiefride association-----	---	---	1,782	1,782	0.3
235	Hawkinspeak-Angelwhine association-----	---	---	2,029	2,029	0.3
240	Granylith-Hargran-Rock outcrop complex, 8 to 30 percent slopes-----	8,971	---	---	8,971	1.4
250	Florand-Lostridge-Fishsnooze association----	18,509	---	---	18,509	2.8
260	Hawkridge-Hawkinspeak association-----	4,074	---	1,708	5,782	0.9
261	Hawkridge-Lithnip-Hawkinspeak association----	4,825	---	667	5,492	0.8
262	Domehill-Kiote association-----	---	---	1,399	1,399	0.2
270	Duco-Smallcone-Cagle association-----	7,698	---	---	7,698	1.2
271	Duco-Vetagrande-Pinenut association-----	4,439	---	119	4,558	0.7
280	Longcreek-Devada association-----	599	---	---	599	*
290	Pernty-Chen association-----	60	---	4	64	*
310	Bagval-Wethag complex, 0 to 8 percent slopes----	278	---	---	278	*
320	Franktown-Rock outcrop complex, 50 to 75 percent slopes-----	2,109	---	---	2,109	0.3

TABLE 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Alpine County	El Dorado County	Mono County	Total	
					Area	Extent
		Acres	Acres	Acres	Acres	Pct
330	Oest very bouldery sandy loam, 2 to 8 percent slopes-----	173	---	267	440	*
340	Aspocket association-----	1,375	---	2,861	4,236	0.6
350	Leroman-Chenhigh-Celeridge association-----	9,998	---	1,111	11,109	1.7
360	Monibasin-Vermdig association-----	802	---	31	833	0.1
370	Celeridge-Gerdog-Loope association-----	7,016	---	515	7,531	1.1
380	Joecut-Celeridge-Gerdog association-----	5,038	---	---	5,038	0.8
381	Joecut-Heenlake association-----	21,514	---	217	21,731	3.3
382	Joecut association-----	4,338	---	2,572	6,910	1.0
390	Heenlake-Loope-Chenhigh association-----	13,984	---	1,383	15,367	2.3
391	Heenlake-Loope-Dogbed association-----	---	---	3,054	3,054	0.5
392	Heenlake-Loope association-----	---	---	2,383	2,383	0.4
400	Pinew-Carshal-Loope association-----	4,807	---	1	4,808	0.7
401	Pinew-Rock outcrop association-----	---	---	4,051	4,051	0.6
410	Wolfcut very stony loam, 8 to 30 percent slopes-----	2,611	---	655	3,266	0.5
420	Buggin-Rock outcrop complex, 30 to 75 percent slopes-----	755	---	1,777	2,532	0.4
430	Newcone-Rock outcrop complex, 30 to 75 percent slopes-----	487	---	---	487	*
440	Dogbed-Celeridge-Carshal association-----	716	---	2,301	3,017	0.5
450	Carshal-Loope-Rock outcrop complex, 15 to 75 percent slopes-----	3,338	---	53	3,391	0.5
460	Toejom-Pimogran-Rock outcrop association-----	---	---	8,899	8,899	1.3
461	Toejom-Pimogran-Rock outcrop association, 50 to 75 percent slopes-----	---	---	3,967	3,967	0.6
462	Toejom-Glenbrook-Pimogran association-----	---	---	1,053	1,053	0.2
470	Sumeadow-Lostridge association-----	35	---	7,998	8,033	1.2
471	Sumeadow association-----	---	---	2,909	2,909	0.4
480	Aspetill association-----	---	---	3,567	3,567	0.5
481	Aspetill association, very stony-----	---	---	375	375	*
490	Cloudburst-Murain association-----	---	---	3,006	3,006	0.5
491	Cloudburst-Murain-Hardtill association-----	---	---	670	670	0.1
500	Chrisflat very gravelly coarse sandy loam, 4 to 15 percent slopes-----	483	---	3,723	4,206	0.6
510	Rubble land-Lithnip-Rock outcrop association-----	---	---	2,725	2,725	0.4
511	Rock outcrop-Snowtell-Forsell complex, 8 to 30 percent slopes-----	---	---	5,580	5,580	0.8
512	Rock outcrop-Snowtell complex, 30 to 75 percent slopes-----	---	---	1,879	1,879	0.3
513	Rubble land-Holdon-Rock outcrop complex, 30 to 100 percent slopes-----	---	---	6,987	6,987	1.1
520	Canfire-Crispy-Rock outcrop association-----	---	---	3,660	3,660	0.6
530	Elaero-Lockgate-Granhogany association-----	---	---	8,298	8,298	1.3
531	Elaero association-----	---	---	5,075	5,075	0.8
532	Elaero-Granidry-Rock outcrop association-----	---	---	1,126	1,126	0.2
540	Lostcannon association-----	26	---	960	986	0.1
560	Dunderberg-Conwayridge association-----	---	---	4,047	4,047	0.6
561	Dunderberg association-----	---	---	2,793	2,793	0.4
570	Angelwhine-Hawkinspeak-Hawkridge association-----	---	---	2,393	2,393	0.4
580	Murain-Shorthike association-----	---	---	8,196	8,196	1.2
581	Murain association-----	380	---	12,279	12,659	1.9
590	Loope-Heenlake-Carshal association-----	---	---	2,577	2,577	0.4
591	Loope-Heenlake-Celeridge association-----	---	---	3,763	3,763	0.6
592	Loope-Pinew-Heenlake association-----	---	---	2,945	2,945	0.4
600	Snowtell-Sonorapass-Rock outcrop complex, 8 to 30 percent slopes-----	---	---	1,379	1,379	0.2
610	Forsell-Snowtell-Rock outcrop complex, 8 to 30 percent slopes-----	---	---	5,122	5,122	0.8
611	Forsell-Snowtell-Rock outcrop complex, 30 to 50 percent slopes-----	---	---	1,896	1,896	0.3
620	Indian Creek very gravelly sandy loam, 2 to 8 percent slopes-----	---	---	175	175	*
630	Olac-Flex-Duco association-----	---	---	1,491	1,491	0.2
640	Koontz-Nosrac association-----	---	---	1,431	1,431	0.2
650	Shree very gravelly sandy loam, 4 to 15 percent slopes-----	---	---	399	399	*
651	Shree-Holbrook association-----	---	---	1,765	1,765	0.3
660	Delhew-Grandridge-Bakscratch association-----	---	---	9,767	9,767	1.5
670	Springmeyer gravelly sandy loam, 4 to 8 percent slopes-----	---	---	371	371	*
671	Springmeyer-Cassiro association-----	359	---	---	359	*

TABLE 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Alpine County	El Dorado County	Mono County	Total	
					Area	Extent
		Acres	Acres	Acres	Acres	Pct
680	Roll-down-Mountpatterson-Rubble land complex, 4 to 30 percent slopes-----	---	---	2,546	2,546	0.4
700	Coldtree-Rubble land complex, 30 to 75 percent slopes-----	---	---	2,411	2,411	0.4
710	Bakscratch-Grandridge-McTom association-----	---	---	862	862	0.1
720	Nohelp-Joenschris association-----	---	---	2,092	2,092	0.3
730	Burchflat-Loope association-----	---	---	10,423	10,423	1.6
731	Burchflat-Celeridge-Loope association-----	---	---	11,065	11,065	1.7
740	Jackflat-Grandridge association-----	---	---	1,258	1,258	0.2
760	Thief ridge-Rock outcrop complex, 30 to 75 percent slopes-----	---	---	1,672	1,672	0.3
770	Sweetmount-Hawkinspeak-Hawkridge association-----	---	---	6,185	6,185	0.9
780	Granhogany-Rock outcrop complex, 15 to 50 percent slopes-----	---	---	1,269	1,269	0.2
790	Dab association-----	---	---	3,352	3,352	0.5
791	Dab-Longday-Thief ridge association-----	---	---	18,066	18,066	2.7
792	Dab-Aspocket-Hawkridge association-----	---	---	2,439	2,439	0.4
800	Grandridge-Delhew association-----	---	---	1,475	1,475	0.2
801	Grandridge-Delhew-Bullville association-----	---	---	1,628	1,628	0.2
810	Corbett-Toiyabe-Rock outcrop complex, 15 to 50 percent slopes-----	---	---	4,358	4,358	0.7
820	Freelpeak-Windyridge-Rock outcrop complex, 15 to 75 percent slopes-----	215	---	---	215	*
830	Windyridge-Freelpeak-Rock outcrop complex, 8 to 30 percent slopes-----	---	---	343	343	*
840	Lavaspring-Trespas complex, 0 to 4 percent slopes-----	---	---	1,394	1,394	0.2
850	Lunder very gravelly sandy loam, 2 to 8 percent slopes-----	---	---	335	335	*
851	Lunder-Leviathan association-----	---	---	434	434	*
860	Hardnut-Ocashe association-----	---	---	13,830	13,830	2.1
870	Epvip-Domehill-Ashflat association-----	---	---	2,026	2,026	0.3
871	Halfash-Domehill association-----	---	---	1,109	1,109	0.2
872	Epvip-Vetash association-----	---	---	721	721	0.1
873	Epvip-Hardnut-Vetash association-----	---	---	3,384	3,384	0.5
880	Mopana very gravelly ashy fine sandy loam, 0 to 8 percent slopes-----	---	---	83	83	*
890	Masonic-Epvip-Domehill association-----	---	---	2,906	2,906	0.4
900	Brokenhoe-Fisherdig association-----	---	---	3,582	3,582	0.5
910	Indian Creek-Haybourne association-----	---	---	16	16	*
920	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes-----	---	---	365	365	*
930	Lavaspring complex, 0 to 4 percent slopes----	---	---	399	399	*
960	Rose Creek loam, 0 to 2 percent slopes-----	---	---	10	10	*
998	Dumps-Pits complex-----	245	---	---	245	*
999	Water-----	532	---	1,824	2,356	0.4
	Total-----	264,631	21	399,131	663,783	100.0

* Less than 0.1 percent.

TABLE 5.-- Land Capability Classification

Land capability is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period of time.

LCC placement in California is based on state criteria developed in 1978, revised in 1992.

Map symbol and soil name	Land Capability	
	N	I
100:		
Lithnip-----	8s	---
Hawkinspeak-----	6s	---
Rock Outcrop-----	---	---
101:		
Lithnip, moist-----	8s	---
Rock Outcrop-----	---	---
Fishsnooze-----	6s	---
102:		
Lithnip-----	8s	---
Rock Outcrop-----	---	---
Fishsnooze-----	6s	---
103:		
Lithnip-----	7s	---
Meiss-----	7e	---
Hawkinspeak-----	6s	---
110:		
Jobsis-----	7s	---
Whittell-----	7e	---
Rock Outcrop-----	---	---
111:		
Whittell-----	7e	---
Jobsis-----	7s	---
Rock Outcrop-----	---	---
112:		
Jobsis-----	7s	---
Whittell-----	7e	---
Rock Outcrop-----	---	---
113:		
Whittell-----	7e	---
Jobsis-----	7s	---
Rock Outcrop-----	---	---
120:		
Toiyabe-----	7e	---
Corbett-----	7e	---

TABLE 5.-- Land Capability Classification--Continued

Map symbol and soil name	Land Capability	
	N	I
Rock Outcrop-----	---	---
121: Toiyabe-----	7e	---
Corbett-----	7e	---
Rock Outcrop-----	---	---
122: Toiyabe-----	7e	---
Corbett-----	7e	---
Rock Outcrop-----	---	---
130: Sofgran-----	6e	---
Klauspeak-----	6e	---
Temo-----	8	---
131: Sofgran-----	6e	---
Temo-----	8	---
Shalgran-----	7s	---
132: Sofgran-----	6e	---
Temo-----	8	---
Rock Outcrop-----	---	---
140: Temo-----	8	---
Dagget-----	7e	---
Rock Outcrop-----	---	---
150: Mottskel-----	6s	---
160: Hopeval-----	6w	---
Hopeval-----	6w	---
162: Corralval-----	6s	---
Hopeval-----	6w	---
170: Burnlake-----	6s	---
Roadcat-----	6s	---
171: Stumpatil-----	6s	---
Morscour-----	8s	---

TABLE 5.-- Land Capability Classification--Continued

Map symbol and soil name	Land Capability	
	N	I
172: Stumpatil-----	6s	---
173: Stumpatil-----	6s	---
174: Stumpatil-----	6s	---
Sonorapass-----	7s	---
Snowtell-----	8s	---
180: Shalgran-----	7s	---
Rock Outcrop-----	---	---
190: Hopeval-----	5w	---
Hopeval-----	5w	---
200: Cavebear-----	6e	---
Hopeval-----	6w	---
Hopeval-----	6w	---
210: Waterpeak-----	7s	---
Rock Outcrop-----	---	---
211: Waterpeak-----	6s	---
Buggin-----	8s	---
Rock Outcrop-----	---	---
212: Waterpeak-----	6s	---
Sofgran-----	6e	---
Temo-----	8	---
220: Hardtil-----	7e	---
Alpineco-----	6s	---
Rock Outcrop-----	---	---
221: Hardtil-----	7e	---
Alpineco-----	6s	---
Rock Outcrop-----	---	---
222: Hardtil-----	7e	---

TABLE 5.-- Land Capability Classification--Continued

Map symbol and soil name	Land Capability	
	N	I
Alpineco-----	6s	---
Rock Outcrop-----	---	---
230:		
Hawkinspeak-----	6s	---
Thiefridge-----	7s	---
Angelwhine-----	6s	---
231:		
Hawkinspeak-----	6s	---
Hawkinspeak-----	6s	---
232:		
Hawkinspeak-----	6s	---
Hawkinspeak-----	6s	---
HawkrIDGE-----	7s	---
233:		
Angelwhine-----	6s	---
Hawkinspeak-----	6s	---
HawkrIDGE-----	7s	---
234:		
Hawkinspeak-----	6s	---
Hawkinspeak-----	6s	---
Thiefridge-----	7s	---
235:		
Hawkinspeak-----	7s	---
Hawkinspeak-----	7s	---
Angelwhine-----	7s	---
240:		
Granylith-----	8s	---
Hargran-----	6e	---
Rock Outcrop-----	---	---
250:		
Florand-----	6s	---
Lostridge-----	6s	---
Fishsnooze-----	6s	---
260:		
HawkrIDGE-----	7s	---
Hawkinspeak-----	6s	---
Hawkinspeak-----	6s	---

TABLE 5.-- Land Capability Classification--Continued

Map symbol and soil name	Land Capability	
	N	I
261:		
Hawkridge-----	7s	---
Lithnip-----	8s	---
Hawkinspeak-----	6s	---
262:		
Domehill-----	7s	---
Kiote-----	6e	---
270:		
Duco-----	8s	---
Smallcone-----	6s	---
Cagle-----	7s	---
271:		
Duco-----	7s	---
Vetagrande-----	6s	---
Pinenut-----	7s	---
280:		
Longcreek-----	7s	---
Devada-----	7s	---
290:		
Pernty-----	7s	---
Chen-----	7s	---
310:		
Bagval-----	4e	---
Bagval-----	4e	---
Wetbag-----	6w	---
Wetbag-----	6w	---
320:		
Franktown-----	7s	---
Rock Outcrop-----	---	---
330:		
Oest-----	6s	4s-7
340:		
Aspocket-----	6e	---
Aspocket-----	6e	---
350:		
Leroman-----	6s	---
Chenhigh-----	7s	---
Celeridge-----	7s	---
Dogbed-----	6s	---

TABLE 5.-- Land Capability Classification--Continued

Map symbol and soil name	Land Capability	
	N	I
360:		
Monibasin-----	6e	---
Vermdig-----	6e	---
370:		
Celeridge-----	7s	---
Gerdog-----	7s	---
Loope-----	7s	---
Pinew-----	6s	---
380:		
Joecut-----	6s	---
Celeridge-----	7s	---
Joecut-----	6s	---
Gerdog-----	7s	---
381:		
Heenlake-----	7s	---
Loope-----	7s	---
Joecut-----	6s	---
Joecut-----	6s	---
382:		
Joecut-----	6s	---
Joecut-----	6s	---
390:		
Heenlake-----	6s	---
Loope-----	7s	---
Chenhigh-----	7s	---
391:		
Heenlake-----	6s	---
Loope-----	7s	---
Dogbed-----	6s	---
392:		
Heenlake-----	6s	---
Loope-----	7s	---
400:		
Pinew-----	6s	---
Carshal-----	8s	---
Loope-----	7s	---
Celeridge-----	7s	---

TABLE 5.-- Land Capability Classification--Continued

Map symbol and soil name	Land Capability	
	N	I
401:		
Pinew-----	6s	---
Rock Outcrop-----	---	---
410:		
Wolfcut-----	6s	---
420:		
Buggin-----	8s	---
Rock Outcrop-----	---	---
430:		
Newcone-----	8s	---
Rock Outcrop-----	---	---
440:		
Dogbed-----	6s	---
Celeridge-----	7s	---
Carshal-----	8s	---
Joecut-----	6s	---
450:		
Carshal-----	8s	---
Loope-----	7s	---
Rock Outcrop-----	---	---
460:		
Toejom-----	8s	---
Pimogran-----	8s	---
Rock Outcrop-----	---	---
461:		
Toejom-----	8s	---
Pimogran-----	8s	---
Rock Outcrop-----	---	---
462:		
Toejom-----	8s	---
Glenbrook-----	7e	---
Pimogran-----	7s	---
470:		
Sumeadow-----	6s	---
Lostridge-----	6s	---
471:		
Sumeadow-----	6s	---
Sumeadow-----	6s	---

TABLE 5.-- Land Capability Classification--Continued

Map symbol and soil name	Land Capability	
	N	I
480:		
Aspetill-----	6s	---
Aspetill-----	6s	---
481:		
Aspetill-----	6s	---
Aspetill-----	6s	---
490:		
Cloudburst-----	7s	---
Murain-----	7s	---
491:		
Cloudburst-----	7s	---
Murain-----	7s	---
Hardtil-----	7e	---
500:		
Chrisflat-----	6s	---
510:		
Rubble Land-----	---	---
Lithnip-----	8s	---
Rock Outcrop-----	---	---
Fishsnooze-----	6s	---
511:		
Rock Outcrop-----	---	---
Snowtell-----	8s	---
Forsell-----	6s	---
512:		
Rock Outcrop-----	---	---
Snowtell-----	8s	---
513:		
Rubble Land-----	---	---
Holdon-----	6s	---
Rock Outcrop-----	---	---
520:		
Canfire-----	7s	---
Crispy-----	7s	---
Rock Outcrop-----	---	---
530:		
Elaero-----	7s	---
Lockgate-----	7s	---
Granhogany-----	8s	---

TABLE 5.-- Land Capability Classification--Continued

Map symbol and soil name	Land Capability	
	N	I
Granidry-----	7s	---
531: Elaero-----	7e	---
Elaero-----	7s	---
532: Elaero-----	7s	---
Granidry-----	7s	---
Rock Outcrop-----	---	---
540: Lostcannon, moist-----	6s	---
Lostcannon-----	6s	---
560: Dunderberg-----	6s	---
Dunderberg, warm-----	6s	---
Conwayridge-----	6s	---
Dunderberg, moist-----	6s	---
561: Dunderberg-----	6s	---
Dunderberg, warm-----	6s	---
Dunderberg, moist-----	6s	---
570: Angelwhine-----	6s	---
Hawkinspeak-----	6s	---
Hawkridge-----	8s	---
580: Murain-----	6s	---
Shorthike-----	6s	---
Murain, moist-----	6s	---
581: Murain-----	6s	---
Murain-----	6s	---
590: Loope-----	7s	---
Heenlake-----	6s	---
Carshal-----	8s	---
591: Loope-----	7s	---
Heenlake-----	6s	---

TABLE 5.-- Land Capability Classification--Continued

Map symbol and soil name	Land Capability	
	N	I
Celeridge-----	7s	---
592: Loope-----	7s	---
Pinew-----	6s	---
Heenlake-----	6s	---
600: Snowtell-----	8s	---
Sonorapass-----	7s	---
Rock Outcrop-----	---	---
610: Forsell-----	6s	---
Snowtell-----	8s	---
Rock Outcrop-----	---	---
611: Forsell-----	6s	---
Snowtell-----	8s	---
Rock Outcrop-----	---	---
620: Indian Creek-----	6s	---
630: Olac-----	8s	---
Flex-----	8s	---
Duco-----	7s	---
640: Koontz-----	7s	---
Nosrac-----	7s	---
650: Shree-----	6s	---
651: Shree-----	6s	---
Holbrook-----	6s	4s-7
660: Delhew-----	6s	---
Grandridge-----	7s	---
Bakscratch-----	7s	---
670: Springmeyer-----	6e	---
671: Springmeyer-----	6e	---

TABLE 5.-- Land Capability Classification--Continued

Map symbol and soil name	Land Capability	
	N	I
Cassiro-----	6e	2e-5
680: Rolldown-----	6s	---
Mountpatterson-----	7s	---
Rubble Land-----	---	---
700: Coldtree-----	6s	---
Rubble Land-----	---	---
710: Bakscratch-----	7e	---
Grandridge-----	7e	---
McTom-----	7e	---
720: Nohelp-----	6e	4e-3
Joenchris-----	6e	---
730: Burchflat-----	6s	---
Loope-----	7s	---
731: Burchflat-----	6s	---
Celeridge-----	7s	---
Loope-----	7s	---
740: Jackflat-----	6s	---
Grandridge-----	7s	---
760: Thiefridge-----	7s	---
Thiefridge-----	7s	---
Rock Outcrop-----	---	---
770: Sweetmount-----	6s	---
Hawkinspeak-----	6s	---
Hawkridge-----	8s	---
780: Granhogany-----	8s	---
Rock Outcrop-----	---	---
790: Dab-----	6s	---
Dab-----	6s	---

TABLE 5.-- Land Capability Classification--Continued

Map symbol and soil name	Land Capability	
	N	I
791:		
Dab-----	6s	---
Longday-----	6s	---
Thiefridge-----	7s	---
792:		
Dab-----	6s	---
Aspocket-----	6s	---
Hawkridge-----	8s	---
800:		
Grandridge-----	7s	---
Delhew-----	6s	---
801:		
Grandridge-----	6s	---
Delhew-----	7e	---
Bullville-----	7s	---
810:		
Corbett-----	7s	---
Toiyabe-----	7s	---
Rock Outcrop-----	---	---
820:		
Freelpeak-----	8e	---
Windyridge-----	8s	---
Rock Outcrop-----	---	---
830:		
Windyridge-----	8s	---
Freelpeak-----	8e	---
Rock Outcrop-----	---	---
840:		
Lavaspring-----	5w	---
Trespass-----	6w	---
Lavaspring-----	5w	---
850:		
Lunder-----	7s	---
851:		
Lunder-----	7s	---
Leviathan-----	6s	---
860:		
Hardnut-----	6s	---
Ocashe-----	7s	---

TABLE 5.-- Land Capability Classification--Continued

Map symbol and soil name	Land Capability	
	N	I
870:		
Epvip-----	6s	---
Domehill-----	7s	---
Ashflat-----	6e	---
871:		
Halfash-----	6s	---
Domehill-----	7s	---
872:		
Epvip-----	6s	---
Vetash-----	6s	---
Epvip-----	6e	---
873:		
Epvip-----	6s	---
Hardnut-----	6s	---
Vetash-----	6s	---
880:		
Mopana-----	6s	---
890:		
Masonic-----	6s	---
Epvip-----	6e	---
Domehill-----	7s	---
900:		
Brokenhoe-----	6s	---
Fisherdig-----	6s	---
910:		
Indian Creek-----	6s	---
Haybourne-----	6e	3e-4
920:		
Aquic Torrifluvents-----	7s	---
Conway-----	6w	3w-1
Torrifluventic Haploxerolls-----	7s	---
930:		
Lavaspring-----	5w	---
Lavaspring-----	5w	---
960:		
Rose Creek-----	5w	3w-2
998:		
Dumps-----	---	---
Pits-----	---	---

TABLE 5.-- Land Capability Classification--Continued

Map symbol and soil name	Land Capability	
	N	I
999: Water-----	---	---

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
100: Lithnip-----	Barren Slope 20+ P.z.- R022AY012NV	650	350	75	Indian ricegrass (ACHY)----- bluegrass (POA)----- western needlegrass (ACOCO)---- mulesears wyethia (WYAM)----- wild mint (MEAR4)----- erigonum (ERIOG)----- goldenweed (PYRRO)----- lupine (LUPIN)----- low sagebrush (ARAR8)----- mountain big sagebrush (ARTRV)- snowberry (SYMPH)-----	5 5 5 25 10 5 5 5 2 2 2
Hawkinspeak-----	South Slope 30+ P.z.- R022AY021NV	1,400	1,200	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 25 10 20 15
101: Lithnip, moist-----	Alpine Ridge-R022AY032NV	200	75	25	bluegrass (POA)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- other shrubs (SSSS)-----	10 10 50 5
Fishsnooze-----	Pinus Albicaulis-Pinus Flexilis/poa-Carex- F022AY126NV	150	100	50	-----	---
102: Lithnip-----	Alpine Ridge-R022AY032NV	200	75	25	bluegrass (POA)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- other shrubs (SSSS)-----	10 10 50 5
Fishsnooze-----	Pinus Albicaulis-Pinus Flexilis/poa-Carex- F022AY126NV	150	100	50	-----	---
103: Lithnip-----	Barren Slope 20+ P.z.- R022AY012NV	650	350	75	Indian ricegrass (ACHY)----- bluegrass (POA)----- western needlegrass (ACOCO)---- mulesears wyethia (WYAM)----- wild mint (MEAR4)----- erigonum (ERIOG)----- goldenweed (PYRRO)----- lupine (LUPIN)----- low sagebrush (ARAR8)----- mountain big sagebrush (ARTRV)- snowberry (SYMPH)-----	5 5 5 25 10 5 5 5 2 2 2
Meiss-----	Shallow Andesite Ridge- R022AE211CA	600	355	110	low sagebrush (ARAR8)----- roundleaf snowberry (SYRO)----- spreading phlox (PHDI3)----- sulfur flower buckwheat (ERUM)- Sandberg bluegrass (POSE)----- western needlegrass (ACOCO)----	35 10 9 8 6 2
Hawkinspeak-----	South Slope 30+ P.z.- R022AY021NV	1,400	1,200	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 25 10 20 15
110: Jobsis-----	Pinus Albicaulis-Pinus Flexilis/poa-Carex- F022AY126NV	150	100	50	-----	---

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Jobsis-----	Pinus Albicaulis-Pinus Flexilis/poa-Carex- F022AY126NV	150	100	50	-----	---
112: Jobsis-----	Pinus Albicaulis/carex- Poa-F022AY134NV	150	100	50	-----	---
Jobsis-----	Pinus Albicaulis/carex- Poa-F022AY134NV	150	100	50	-----	---
120: Toiyabe-----	Pinus Jeffreyi-Abies Concolor Var. Lowiana/artemisia Tridentata Ssp. Vaseyana/achnatherum Occidentale Ssp. Occidentale-F022AY116NV	450	375	300	-----	---
Corbett-----	Pinus Jeffreyi-Abies Concolor Var. Lowiana/artemisia Tridentata Ssp. Vaseyana/achnatherum Occidentale Ssp. Occidentale-F022AY116NV	450	375	300	-----	---
121: Toiyabe-----	Pinus Jeffreyi-Abies Concolor Var. Lowiana/artemisia Tridentata Ssp. Vaseyana/achnatherum Occidentale Ssp. Occidentale-F022AY116NV	450	375	300	-----	---
Corbett-----	Pinus Jeffreyi-Abies Concolor Var. Lowiana/artemisia Tridentata Ssp. Vaseyana/achnatherum Occidentale Ssp. Occidentale-F022AY116NV	450	375	300	-----	---
122: Toiyabe-----	Pinus Jeffreyi-Abies Concolor Var. Lowiana/artemisia Tridentata Ssp. Vaseyana/achnatherum Occidentale Ssp. Occidentale-F022AY116NV	450	375	300	-----	---
Corbett-----	Pinus Jeffreyi-Abies Concolor Var. Lowiana/artemisia Tridentata Ssp. Vaseyana/achnatherum Occidentale Ssp. Occidentale-F022AY116NV	450	375	300	-----	---
130: Sofgran-----	Pinus Contorta-Abies Magnifica/arctostaphylos Nevadensis/achnatherum Occidentale Ssp. Occidentale-Carex Rossii-F022AY106NV	500	425	350	-----	---

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Klauspeak-----	Abies Magnifica-Pinus Contorta/artemisia Tridentata Ssp. Vaseyana/bromus Marginatus-Achnatherum Occidentale Ssp. Occidentale-F022AY118NV	700	600	450	-----	---
Temo-----	Pinus Contorta-Abies Magnifica/artemisia Tridentata Ssp. Tridentata/achnatherum Occidentale Ssp. Occidentale-Carex Rossii-F022AY121NV	150	75	50	-----	---
131: Sofgran-----	Pinus Contorta-Abies Magnifica/arctostaphylos Nevadensis/achnatherum Occidentale Ssp. Occidentale-Carex Rossii-F022AY106NV	500	425	350	-----	---
Temo-----	Pinus Contorta-Abies Magnifica/artemisia Tridentata Ssp. Tridentata/achnatherum Occidentale Ssp. Occidentale-Carex Rossii-F022AY121NV	150	75	50	-----	---
Shalgran-----	Pinus Jeffreyi/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata-F022AY130NV	350	250	150	-----	---
132: Sofgran-----	Pinus Contorta-Abies Magnifica/arctostaphylos Nevadensis/achnatherum Occidentale Ssp. Occidentale-Carex Rossii-F022AY106NV	500	425	350	-----	---
Temo-----	Pinus Contorta-Abies Magnifica/artemisia Tridentata Ssp. Tridentata/achnatherum Occidentale Ssp. Occidentale-Carex Rossii-F022AY121NV	150	75	50	-----	---
140: Temo-----	Pinus Contorta-Abies Magnifica/artemisia Tridentata Ssp. Tridentata/achnatherum Occidentale Ssp. Occidentale-Carex Rossii-F022AY121NV	150	75	50	-----	---
Dagget-----	Pinus Contorta-Abies Magnifica/arctostaphylos Nevadensis/achnatherum Occidentale Ssp. Occidentale-Carex Rossii-F022AY106NV	500	425	350	-----	---

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
150: Mottskel-----	Granitic Fan 10-12 P.z.- R026XY008NV	1,000	800	600	needleandthread (HECOC8)----- Indian ricegrass (ACHY)----- antelope bitterbrush (PUTR2)--- mountain big sagebrush (ARTRV)-	25 20 20 15
160: Hopeval-----	Wet Meadow-R022AY016NV	4,000	3,500	3,000	Nebraska sedge (CANE2)----- Baltic rush (JUBA)----- tufted hairgrass (DECE)----- other perennial forbs (PPFF)--- other perennial grasses (PPGG)-	60 10 10 5 5
Hopeval-----	Semi-Wet Meadow- R022AY017NV	3,500	2,000	1,300	sedge (CAREX)----- bluegrass (POA)----- tufted hairgrass (DECE)----- Baltic rush (JUBA)----- creeping bentgrass (AGST2)----- other perennial grasses (PPGG)- other perennial forbs (PPFF)---	45 20 10 5 5 5 10
162: Corralval-----	Moist Mountain Basin- R022AY054NV	700	500	300	bluegrass (POA)----- sedge (CAREX)----- mat muhly (MURI)----- other perennial forbs (PPFF)--- groundsel (SENEC)----- mountain silver sagebrush (ARCAV2)-----	35 15 5 10 5 25
Hopeval-----	Semi-Wet Meadow- R022AY017NV	3,500	2,000	1,300	sedge (CAREX)----- bluegrass (POA)----- tufted hairgrass (DECE)----- Baltic rush (JUBA)----- creeping bentgrass (AGST2)----- other perennial grasses (PPGG)- other perennial forbs (PPFF)---	45 20 10 5 5 5 10
170: Burnlake-----	Pinus Jeffreyi-Abies Concolor Var. Lowiana/artemisia Tridentata Ssp. Vaseyana/achnatherum Occidentale Ssp. Occidentale-F022AY116NV	450	375	300	-----	---
Roadcat-----	Pinus Contorta/artemisia Tridentata Ssp. Vaseyana-Ribes/carex- Achnatherum Lemmonii Var. Lemmonii- F022AY102NV	450	250	150	-----	---
171: Stumpatil-----	Abies Magnifica-Pinus Contorta/artemisia Tridentata Ssp. Vaseyana/bromus Marginatus-Achnatherum Occidentale Ssp. Occidentale-F022AY118NV	700	600	450	-----	---
Morscour-----	Shallow Loam 30+ P.z.- R022AY038NV	500	300	150	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)--- snowberry (SYMPH)-----	20 20 10 15 5 5

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
172: Stumpatil-----	Pinus Contorta/poa-Carex- F022AY127NV	700	600	450	-----	---
173: Stumpatil-----	Pinus Contorta/poa-Carex- F022AY127NV	700	600	450	-----	---
174: Stumpatil-----	Pinus Contorta/poa-Carex- F022AY127NV	700	600	450	-----	---
Sonorapass-----	Pinus Contorta/poa-Carex- F022AY127NV	175	100	75	-----	---
Snowtell-----	Pinus Contorta/poa-Carex- F022AY127NV	175	100	75	-----	---
180: Shalgran-----	Pinus Jeffreyi/arctostaphylos Nevadensis/achnatherum Lettermanii-F022AY120NV	350	250	150	-----	---
190: Hopeval-----	Semi-Wet Meadow- R022AY017NV	3,500	2,000	1,300	sedge (CAREX)----- bluegrass (POA)----- tufted hairgrass (DECE)----- Baltic rush (JUBA)----- creeping bentgrass (AGST2)----- other perennial grasses (PPGG)- other perennial forbs (PPFF)---	45 20 10 5 5 5 10
Hopeval-----	Wet Meadow-R022AY016NV	4,000	3,500	3,000	Nebraska sedge (CANE2)----- Baltic rush (JUBA)----- tufted hairgrass (DECE)----- other perennial forbs (PPFF)--- other perennial grasses (PPGG)-	60 10 10 5 5
200: Cavebear-----	Dry Meadow-R022AY018NV	2,000	1,500	1,000	big bluegrass (POSE)----- threadleaf sedge (CAFI)----- Baltic rush (JUBA)----- Douglas' sedge (CADO2)----- mat muhly (MURI)----- clover (TRIFO)----- other perennial forbs (PPFF)---	45 15 5 5 5 5 5
Hopeval-----	Semi-Wet Meadow- R022AY017NV	3,500	2,000	1,300	sedge (CAREX)----- bluegrass (POA)----- tufted hairgrass (DECE)----- Baltic rush (JUBA)----- creeping bentgrass (AGST2)----- other perennial grasses (PPGG)- other perennial forbs (PPFF)---	45 20 10 5 5 5 10
Hopeval-----	Wet Meadow-R022AY016NV	4,000	3,500	3,000	Nebraska sedge (CANE2)----- Baltic rush (JUBA)----- tufted hairgrass (DECE)----- other perennial forbs (PPFF)--- other perennial grasses (PPGG)-	60 10 10 5 5
210: Waterpeak-----	South Slope 30+ P.z.- R022AY021NV	1,400	1,200	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 25 10 20 15

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
211: Waterpeak-----	South Slope 30+ P.z.- R022AY021NV	1,400	1,200	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 25 10 20 15
Buggin-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)--- curlleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	15 5 5 65 10
212: Waterpeak-----	Loamy Slope 30+ P.z.- R022AY031NV	1,400	1,200	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- melic (MELIC)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	25 25 10 10 15
Sofgran-----	Pinus Contorta/poa-Carex- F022AY127NV	500	425	350	-----	---
Temo-----	Pinus Contorta/poa-Carex- F022AY127NV	150	75	50	-----	---
220: Hardtil-----	Pinus Contorta/artemisia Tridentata Ssp. Vaseyana-Ribes/carex- Achnatherum Lemmonii Var. Lemmonii- F022AY102NV	450	250	150	-----	---
Alpineco-----	Pinus Contorta/artemisia Tridentata Ssp. Vaseyana-Ribes/carex- Achnatherum Lemmonii Var. Lemmonii- F022AY102NV	450	250	150	-----	---
221: Hardtil-----	Pinus Contorta/artemisia Tridentata Ssp. Vaseyana-Ribes/carex- Achnatherum Lemmonii Var. Lemmonii- F022AY102NV	450	250	150	-----	---
Alpineco-----	Pinus Contorta/artemisia Tridentata Ssp. Vaseyana-Ribes/carex- Achnatherum Lemmonii Var. Lemmonii- F022AY102NV	450	250	150	-----	---
222: Hardtil-----	Pinus Jeffreyi/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata-F022AY130NV	350	250	150	-----	---
Alpineco-----	Pinus Jeffreyi/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata-F022AY130NV	350	250	150	-----	---

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
230: Hawkinspeak-----	South Slope 30+ P.z.- R022AY021NV	1,400	1,200	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 25 10 20 15
Thief ridge-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)--- curleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	15 5 5 65 10
Angelwhine-----	Loamy Slope 30+ P.z.- R022AY031NV	1,600	1,100	800	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- melic (MELIC)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	25 25 10 10 15
231: Hawkinspeak-----	Loamy Slope 30+ P.z.- R022AY031NV	1,600	1,100	800	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- melic (MELIC)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	25 25 10 10 15
Hawkinspeak-----	Mountain Shoulders 30+ P.z.-R022AY010NV	1,050	850	650	western needlegrass (ACOCO)---- mountain brome (BRMA4)----- mountain big sagebrush (ARTRV)-	40 30 15
232: Hawkinspeak-----	Loamy Slope 30+ P.z.- R022AY031NV	1,600	1,100	800	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- melic (MELIC)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	25 25 10 10 15
Hawkinspeak-----	Mountain Shoulders 30+ P.z.-R022AY010NV	1,050	850	650	western needlegrass (ACOCO)---- mountain brome (BRMA4)----- mountain big sagebrush (ARTRV)-	40 30 15
Hawkridge-----	Mountain Ridge 30+ P.z.- R022AY011NV	500	300	150	pine needlegrass (ACPI2)----- prairie junegrass (KOCR)----- goldenweed (PYRRO)----- low sagebrush (ARAR8)-----	25 20 5 35
233: Angelwhine-----	South Slope 30+ P.z.- R022AY021NV	1,400	1,200	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 25 10 20 15
Hawkinspeak-----	South Slope 30+ P.z.- R022AY021NV	1,400	1,200	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 25 10 20 15
Hawkridge-----	Mountain Ridge 30+ P.z.- R022AY011NV	500	300	150	pine needlegrass (ACPI2)----- prairie junegrass (KOCR)----- goldenweed (PYRRO)----- low sagebrush (ARAR8)-----	25 20 5 35
234: Hawkinspeak-----	Mountain Shoulders 30+ P.z.-R022AY010NV	1,050	850	650	western needlegrass (ACOCO)---- mountain brome (BRMA4)----- mountain big sagebrush (ARTRV)-	40 30 15

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Hawkinspeak-----	Loamy Slope 30+ P.z.- R022AY031NV	1,400	1,200	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- melic (MELIC)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	25 25 10 10 15
Thiefridge-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)--- curlleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	15 5 5 65 10
235: Hawkinspeak-----	Mountain Shoulders 30+ P.z.-R022AY010NV	1,050	850	650	western needlegrass (ACOCO)---- mountain brome (BRMA4)----- mountain big sagebrush (ARTRV)-	40 30 15
Hawkinspeak-----	South Slope 30+ P.z.- R022AY021NV	1,400	1,200	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 25 10 20 15
Angelwhine-----	Loamy Slope 30+ P.z.- R022AY031NV	1,600	1,100	800	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- melic (MELIC)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	25 25 10 10 15
240: Granylith-----	Pinus Contorta/arctostaphylos/ carex-Achnatherum- F022AY107NV	450	250	150	-----	---
Hargran-----	Abies Magnifica-Pinus Contorta/artemisia Tridentata Ssp. Vaseyana/bromus Marginatus-Achnatherum Occidentale Ssp. Occidentale-F022AY118NV	500	425	350	-----	---
250: Florand-----	Abies Magnifica-Pinus Contorta/artemisia Tridentata Ssp. Vaseyana/bromus Marginatus-Achnatherum Occidentale Ssp. Occidentale-F022AY118NV	700	600	450	-----	---
Lostridge-----	Pinus Contorta-Abies Magnifica/artemisia Tridentata Ssp. Vaseyana/bromus Marginatus-Achnatherum Occidentale Ssp. Californicum-F022AY105NV	700	600	450	-----	---
Fishsnooze-----	Tsuga Mertensiana/carex- Poa-F022AY114NV	150	75	50	-----	---
260: Hawkridge-----	Mountain Ridge 30+ P.z.- R022AY011NV	500	300	150	pine needlegrass (ACPI2)----- prairie junegrass (KOCR)----- goldenweed (PYRRO)----- low sagebrush (ARAR8)-----	25 20 5 35

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Hawkinspeak-----	Mountain Shoulders 30+ P.z.-R022AY010NV	1,050	850	650	western needlegrass (ACOCO)---- mountain brome (BRMA4)----- mountain big sagebrush (ARTRV)-	40 30 15
Hawkinspeak-----	Loamy Slope 30+ P.z.- R022AY031NV	1,600	1,100	800	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- melic (MELIC)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	25 25 10 10 15
261: HawkrIDGE-----	Mountain Ridge 30+ P.z.- R022AY011NV	500	300	150	pine needlegrass (ACPI2)----- prairie junegrass (KOCR)----- goldenweed (PYRRO)----- low sagebrush (ARAR8)-----	25 20 5 35
Lithnip-----	Barren Slope 20+ P.z.- R022AY012NV	650	350	75	Indian ricegrass (ACHY)----- bluegrass (POA)----- western needlegrass (ACOCO)---- mulesears wyethia (WYAM)----- wild mint (MEAR4)----- erigonum (ERIOG)----- goldenweed (PYRRO)----- lupine (LUPIN)----- low sagebrush (ARAR8)----- mountain big sagebrush (ARTRV)- snowberry (SYMPH)-----	5 5 5 25 10 5 5 5 2 2 2
Hawkinspeak-----	Mountain Shoulders 30+ P.z.-R022AY010NV	1,050	850	650	western needlegrass (ACOCO)---- mountain brome (BRMA4)----- mountain big sagebrush (ARTRV)-	40 30 15
262: Domehill-----	Mountain Ridge- R026XY028NV	300	150	75	pine needlegrass (ACPI2)----- bluegrass (POA)----- other perennial forbs (PPFF)--- low sagebrush (ARAR8)-----	20 10 10 35
Kiote-----	Loamy Slope 16+ P.z.- R026XY109NV	1,100	1,000	800	spike fescue (FEKI2)----- western needlegrass (ACOCO)---- Nevada bluegrass (PONE3)----- prairie Junegrass (KOMA)----- sedge (CAREX)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- snowberry (SYMPH)-----	20 20 5 5 5 5 25 5
270: Duco-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	300	-----	---
Smallcone-----	Pinus Ponderosa/erigonum Robustum/carex- F026XY065NV	125	50	25	-----	---
Cagle-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	300	-----	---

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
271: Duco-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	300	-----	---
Vetagrande-----	Gravelly Loam 14+ P.z.- R026XY040NV	1,500	1,300	800	Columbia needlegrass (STNE3)--- antelope bitterbrush (PUTR2)--- mountain big sagebrush (ARTRV)- basin wildrye (LECI4)----- bluegrass (POA)----- snowberry (SYMPH)----- western needlegrass (ACOCO)----	20 20 15 10 5 5 5
Pinenut-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	300	-----	---
280: Longcreek-----	Loamy Slope 12-14 P.z.- R026XY048NV	1,300	1,100	800	needlegrass (STIPA)----- basin wildrye (LECI4)----- muttongrass (POFE)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	35 5 5 5 20 10
Devada-----	Claypan 10-14 P.z.- R026XY023NV	700	500	350	Thurber needlegrass (ACTH7)---- bluegrass (POA)----- other perennial forbs (PPFF)--- low sagebrush (ARAR8)----- antelope bitterbrush (PUTR2)---	40 15 10 25 5
290: Pernty-----	Loamy Slope 12-14 P.z.- R026XY048NV	1,300	1,100	800	needlegrass (STIPA)----- basin wildrye (LECI4)----- muttongrass (POFE)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	35 5 5 5 20 10
Chen-----	Claypan 12-14 P.z.- R026XY078NV	475	275	100	Thurber needlegrass (ACTH7)---- prairie Junegrass (KOMA)----- bluegrass (POA)----- low sagebrush (ARAR8)-----	35 10 5 30
310: Bagval-----	Moist Claypan-R022AY036NV	500	300	150	bluegrass (POA)----- sedge (CAREX)----- other perennial forbs (PPFF)--- low sagebrush (ARAR8)-----	25 20 10 30
Bagval-----	Clay Basin-R022AY037NV	600	400	200	bluegrass (POA)----- sedge (CAREX)----- mat muhly (MURI)----- other perennial forbs (PPFF)--- mountain silver sagebrush (ARCAV2)-----	35 15 5 10 25

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Wetbag-----	Semi-Wet Meadow- R022AY017NV	3,500	2,000	1,300	sedge (CAREX)----- bluegrass (POA)----- tufted hairgrass (DECE)----- Baltic rush (JUBA)----- creeping bentgrass (AGST2)----- other perennial grasses (PPGG)- other perennial forbs (PPFF)---	45 20 10 5 5 5 10
Wetbag-----	Wet Meadow-R022AY016NV	4,000	3,500	3,000	Nebraska sedge (CANE2)----- Baltic rush (JUBA)----- tufted hairgrass (DECE)----- other perennial forbs (PPFF)---	60 10 10 5 5
320: Franktown-----	Pinus Jeffreyi-Abies Concolor Var. Lowiana/artemisia Tridentata Ssp. Vaseyana/achnatherum Occidentale Ssp. Occidentale-F022AY116NV	450	375	300	-----	---
330: Oest-----	Loamy 10-12 P.z.- R026XY010NV	1,000	800	600	Thurber needlegrass (ACTH7)---- basin wildrye (LECI4)----- bluegrass (POA)----- other perennial forbs (PPFF)---	35 5 5 5 20 5
340: Aspocket-----	Populus Tremuloides/symphoricar- pos/bromus Marginatus- Elymus Trachycaulus Ssp. Trachycaulus-F022AY103NV	800	600	400	-----	---
Aspocket-----	Aspen Thicket-R022AY046NV	800	500	300	mountain brome (BRMA4)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)---	10 10 20 50 5
350: Leroman-----	Gravelly Loam 14-16 P.z.- R022AY030NV	1,800	1,500	1,100	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- mountain brome (BRMA4)----- other perennial forbs (PPFF)---	30 5 5 10 15 10
Chenhigh-----	Claypan 16+ P.z.- R022AY028NV	900	700	500	needlegrass (ACHNA)----- Thurber's needlegrass (ACTH7)-- bluegrass (POA)----- mountain brome (BRMA4)----- other perennial forbs (PPFF)---	35 5 5 5 10 25 5
Celeridge-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)---	15 5 5 65 10
Dogbed-----	Loamy Slope 16-20 P.z.- R022AY023NV	1,800	1,400	900	curleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	10 35 5 10 20

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
360: Monibasin-----	Mountain Basin- R022AY027NV	1,100	800	600	western needlegrass (ACOCO)---- sedge (CAREX)----- lupine (LUPIN)----- mountain big sagebrush (ARTRV)-	35 30 5 20
Vermdig-----	Moist Mountain Basin- R022AY054NV	700	500	300	bluegrass (POA)----- sedge (CAREX)----- mat muhly (MURI)----- other perennial forbs (PPFF)--- groundsel (SENEC)----- mountain silver sagebrush (ARCAV2)-----	35 15 5 10 5 25
370: Celeridge-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)--- curleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	15 5 5 65 10
Gerdog-----	Claypan 16+ P.z.- R022AY028NV	900	700	500	needlegrass (ACHNA)----- Thurber's needlegrass (ACTH7)-- bluegrass (POA)----- mountain brome (BRMA4)----- other perennial forbs (PPFF)--- low sagebrush (ARAR8)----- antelope bitterbrush (PUTR2)---	35 5 5 5 10 25 5
Loope-----	Shallow Loam 16-20 P.z.- R022AY042NV	800	600	400	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	20 5 10 20 10
Pinew-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	300	-----	---
380: Joecut-----	Pinus Jeffreyi-Abies Concolor Var. Lowiana/artemisia Tridentata Ssp. Vaseyana/achnatherum Occidentale Ssp. Occidentale-F022AY116NV	450	375	300	-----	---
Celeridge-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)--- curleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	15 5 5 65 10
Joecut-----	Abies Concolor/artemisia Tridentata Ssp. Vaseyana/achnatherum Lettermanii-Poa- F022AY108NV	450	375	300	-----	---

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Gerdog-----	Claypan 16+ P.z.- R022AY028NV	900	700	500	needlegrass (ACHNA)----- Thurber's needlegrass (ACTH7)-- bluegrass (POA)----- mountain brome (BRMA4)----- other perennial forbs (PPFF)--- low sagebrush (ARAR8)----- antelope bitterbrush (PUTR2)---	35 5 5 5 10 25 5
381: Heenlake-----	Loamy Slope 14-16 P.z.- R022AY022NV	1,300	1,100	800	Thurber's needlegrass (ACTH7)-- western needlegrass (ACOCO)---- basin wildrye (LECI4)----- muttongrass (POFE)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 15 5 5 10 20 10
Loope-----	Shallow Loam 16-20 P.z.- R022AY042NV	800	600	400	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	20 5 10 20 10
Joecut-----	Pinus Jeffreyi-Abies Concolor Var. Lowiana/artemisia Tridentata Ssp. Vaseyana/achnatherum Occidentale Ssp. Occidentale-F022AY116NV	450	375	300	-----	---
Joecut-----	Abies Concolor/artemisia Tridentata Ssp. Vaseyana/achnatherum Lettermanii-Poa- F022AY108NV	450	375	300	-----	---
382: Joecut-----	Pinus Jeffreyi-Abies Concolor Var. Lowiana/artemisia Tridentata Ssp. Vaseyana/achnatherum Occidentale Ssp. Occidentale-F022AY116NV	450	375	300	-----	---
Joecut-----	Abies Concolor/artemisia Tridentata Ssp. Vaseyana/achnatherum Lettermanii-Poa- F022AY108NV	450	375	300	-----	---
390: Heenlake-----	Loamy Slope 14-16 P.z.- R022AY022NV	1,300	1,100	800	Thurber's needlegrass (ACTH7)-- western needlegrass (ACOCO)---- basin wildrye (LECI4)----- muttongrass (POFE)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 15 5 5 10 20 10
Loope-----	Shallow Loam 16-20 P.z.- R022AY042NV	800	600	400	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	20 5 10 20 10

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Chenhigh-----	Claypan 16+ P.z.- R022AY028NV	900	700	500	needlegrass (ACHNA)----- Thurber's needlegrass (ACTH7)-- bluegrass (POA)----- mountain brome (BRMA4)----- other perennial forbs (PPFF)--- low sagebrush (ARAR8)----- antelope bitterbrush (PUTR2)---	35 5 5 5 10 25 5
391: Heenlake-----	Loamy Slope 14-16 P.z.- R022AY022NV	1,300	1,100	800	Thurber's needlegrass (ACTH7)-- western needlegrass (ACOCO)---- basin wildrye (LECI4)----- muttongrass (POFE)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 15 5 5 10 20 10
Loope-----	Shallow Loam 16-20 P.z.- R022AY042NV	800	600	400	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	20 5 10 20 10
Dogbed-----	Loamy Slope 16-20 P.z.- R022AY023NV	1,800	1,400	900	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	35 5 10 20
392: Heenlake-----	Loamy Slope 14-16 P.z.- R022AY022NV	1,300	1,100	800	Thurber's needlegrass (ACTH7)-- western needlegrass (ACOCO)---- basin wildrye (LECI4)----- muttongrass (POFE)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 15 5 5 10 20 10
Loope-----	Shallow Loam 16-20 P.z.- R022AY042NV	800	600	400	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	20 5 10 20 10
400: Pinew-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	350	-----	---
Carshal-----	Eroded Slope 14-20 P.z.- R022AY041NV	200	150	100	mountain big sagebrush (ARTRV)- Thurber's needlegrass (ACTH7)-- antelope bitterbrush (PUTR2)--- Indian ricegrass (ACHY)----- basin wildrye (LECI4)----- other perennial grasses (PPGG)- other shrubs (SSSS)----- other trees (TTTT)-----	15 10 10 5 5 5 5 5
Loope-----	Shallow Loam 16-20 P.z.- R022AY042NV	800	600	400	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	20 5 10 20 10

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Celeridge-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)--- curlleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	15 5 5 65 10
401: Pinew-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	350	-----	---
410: Wolfcut-----	Pinus Jeffreyi-Abies Concolor Var. Lowiana/artemisia Tridentata Ssp. Vaseyana/achnatherum Occidentale Ssp. Occidentale-F022AY116NV	450	375	300	-----	---
420: Buggin-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)--- curlleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	15 5 5 65 10
430: Newcone-----	Pinus Jeffreyi/arctostaphylos- Purshia Tridentata- F022AY129NV	350	250	150	-----	---
440: Dogbed-----	Loamy Slope 16-20 P.z.- R022AY023NV	1,800	1,400	900	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	35 5 10 20
Celeridge-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)--- curlleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	15 5 5 65 10
Carshal-----	Eroded Slope 14-20 P.z.- R022AY041NV	200	150	100	mountain big sagebrush (ARTRV)- Thurber's needlegrass (ACTH7)-- antelope bitterbrush (PUTR2)--- Indian ricegrass (ACHY)----- basin wildrye (LECI4)----- other perennial grasses (PPGG)- other shrubs (SSSS)----- other trees (TTTT)-----	15 10 10 5 5 5 5 5
Joecut-----	Abies Concolor/artemisia Tridentata Ssp. Vaseyana/achnatherum Lettermanii-Poa- F022AY108NV	450	375	300	-----	---

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
450: Carshal-----	Eroded Slope 14-20 P.z.- R022AY041NV	200	150	100	mountain big sagebrush (ARTRV)- Thurber's needlegrass (ACTH7)-- antelope bitterbrush (PUTR2)--- Indian ricegrass (ACHY)----- basin wildrye (LECI4)----- other perennial grasses (PPGG)- other shrubs (SSSS)----- other trees (TTTT)-----	15 10 10 5 5 5 5 5
Loope-----	Shallow Loam 16-20 P.z.- R022AY042NV	800	600	400	western needlegrass (ACOCO)--- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	20 5 10 20 10
460: Toejom-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana/achnatherum Speciosum-Achnatherum Thurberianum-F026XY104NV	300	200	100	-----	---
Pimogran-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	300	-----	---
461: Toejom-----	Pinus Monophylla/artemisia Tridentata Ssp. Wyomingensis/achnatherum Speciosum-F026XY061NV	300	200	100	-----	---
Pimogran-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	300	-----	---
462: Toejom-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana/achnatherum Speciosum-Achnatherum Thurberianum-F026XY104NV	300	200	100	-----	---
Glenbrook-----	Granitic South Slope 10- 12 P.z.-R026XY018NV	800	600	400	desert needlegrass (ACSP12)--- antelope bitterbrush (PUTR2)--- Wyoming big sagebrush (ARTRW8)- Thurber needlegrass (ACTH7)--- green ephedra (EPVI)----- other perennial forbs (PPFF)---	30 20 15 10 5 5
Pimogran-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	300	-----	---

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
470: Sumeadow-----	Pinus Contorta/poa-Carex- F022AY127NV	175	100	75	-----	---
Lostridge-----	Pinus Contorta/poa-Carex- F022AY127NV	700	600	450	-----	---
471: Sumeadow-----	Pinus Contorta/poa-Carex- F022AY127NV	175	100	75	-----	---
Sumeadow-----	Pinus Contorta/poa-Carex- F022AY127NV	175	100	75	-----	---
480: Aspetill-----	Populus Tremuloides/symphoricarp os/bromus Marginatus- Elymus Trachycaulus Ssp. Trachycaulus-F022AY103NV	800	600	400	-----	---
Aspetill-----	Aspen Thicket-R022AY046NV	800	500	300	mountain brome (BRMA4)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- quaking aspen (POTR5)----- snowberry (SYMPH)-----	10 10 20 50 5
481: Aspetill-----	Aspen Thicket-R022AY046NV	800	500	300	mountain brome (BRMA4)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- quaking aspen (POTR5)----- snowberry (SYMPH)-----	10 10 20 50 5
Aspetill-----	Populus Tremuloides/symphoricarp os/bromus Marginatus- Elymus Trachycaulus Ssp. Trachycaulus-F022AY103NV	800	600	400	-----	---
490: Cloudburst-----	Pinus Jeffreyi-Abies Concolor Var. Lowiana/artemisia Tridentata Ssp. Vaseyana/achnatherum Occidentale Ssp. Occidentale-F022AY116NV	450	375	300	-----	---
Murain-----	Coarse Loamy 16-20 P.z.- R022AY044NV	1,600	1,400	1,000	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 10 20 10
491: Cloudburst-----	Pinus Jeffreyi-Abies Concolor Var. Lowiana/artemisia Tridentata Ssp. Vaseyana/achnatherum Occidentale Ssp. Occidentale-F022AY116NV	450	375	300	-----	---
Murain-----	Coarse Loamy 16-20 P.z.- R022AY044NV	1,600	1,400	1,000	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 10 20 10

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Hardtil-----	Pinus Jeffreyi/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata-F022AY130NV	350	250	150	-----	---
500: Chrisflat-----	Loamy Slope 14-16 P.z.- R022AY022NV	1,300	1,100	800	Thurber's needlegrass (ACTH7)--- western needlegrass (ACOCO)---- basin wildrye (LECI4)----- muttongrass (POFE)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 15 5 5 10 20 10
Lithnip-----	Alpine Ridge-R022AY032NV	200	75	25	bluegrass (POA)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- other shrubs (SSSS)-----	10 10 50 5
Fishsnooze-----	Krummholz-R022AY051NV	2,000	1,500	1,000	bluegrass (POA)----- other perennial forbs (PPFF)--- whitebark pine (PIAL)-----	5 15 60
Snowtell-----	Pinus Contorta/poa-Carex- F022AY127NV	175	100	75	-----	---
Forsell-----	Pinus Contorta/poa-Carex- F022AY127NV	175	100	75	-----	---
Snowtell-----	Pinus Contorta/poa-Carex- F022AY127NV	175	100	75	-----	---
Holdon-----	Alpine Ridge-R022AY032NV	200	75	25	bluegrass (POA)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- other shrubs (SSSS)-----	10 10 50 5
520: Canfire-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana/achnatherum Speciosum-Achnatherum Thurberianum-F026XY104NV	300	200	100	-----	---
Crispy-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	300	-----	---
530: Elaero-----	South Slope 14-16 P.z.- R022AY043NV	1,400	1,000	600	needlegrass (ACHNA)----- Indian ricegrass (ACHY)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 5 10 15 10
Lockgate-----	Loamy Slope 16-20 P.z.- R022AY023NV	1,800	1,400	900	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	35 5 10 20
Granhogany-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)--- curleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	15 5 5 65 10

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Granidry-----	Granitic South Slope 14- 16 P.z.-R022AY048NV	1,200	1,000	800	desert needlegrass (ACSP12)---- lupine (LUPIN)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	15 5 5 25 15
531: Elaero-----	Coarse Loamy 16-20 P.z.- R022AY044NV	1,600	1,000	1,000	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 10 20 10
Elaero-----	South Slope 14-16 P.z.- R022AY043NV	1,400	1,000	600	needlegrass (ACHNA)----- Indian ricegrass (ACHY)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 5 10 15 10
532: Elaero-----	South Slope 14-16 P.z.- R022AY043NV	1,400	1,000	600	needlegrass (ACHNA)----- Indian ricegrass (ACHY)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 5 10 15 10
Granidry-----	Granitic South Slope 14- 16 P.z.-R022AY048NV	1,200	1,000	800	desert needlegrass (ACSP12)---- lupine (LUPIN)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	15 5 5 25 15
540: Lostcannon, moist-----	Aspen Thicket-R022AY046NV	800	500	300	mountain brome (BRMA4)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- quaking aspen (POTR5)----- snowberry (SYMPH)-----	10 10 20 50 5
Lostcannon-----	Populus Tremuloides/symphoricarp os/bromus Marginatus- Elymus Trachycaulus Ssp. Trachycaulus-F022AY103NV	800	600	400	-----	---
560: Dunderberg-----	Mountain Shoulders 30+ P.z.-R022AY010NV	1,050	850	650	western needlegrass (ACOCO)---- mountain brome (BRMA4)----- mountain big sagebrush (ARTRV)-	40 30 15
Dunderberg, warm-----	South Slope 30+ P.z.- R022AY021NV	1,300	1,100	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 25 10 20 15
Conwayridge-----	Mountain Ridge 30+ P.z.- R022AY011NV	500	300	150	pine needlegrass (ACPI2)----- prairie junegrass (KOCR)----- goldenweed (PYRRO)----- low sagebrush (ARAR8)-----	25 20 5 35
Dunderberg, moist-----	Loamy Slope 30+ P.z.- R022AY031NV	1,300	1,100	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- melic (MELIC)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	25 25 10 10 15
561: Dunderberg-----	Mountain Shoulders 30+ P.z.-R022AY010NV	1,050	850	650	western needlegrass (ACOCO)---- mountain brome (BRMA4)----- mountain big sagebrush (ARTRV)-	40 30 15

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Dunderberg, warm-----	South Slope 30+ P.z.- R022AY021NV	1,300	1,100	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 25 10 20 15
Dunderberg, moist-----	Loamy Slope 30+ P.z.- R022AY031NV	1,300	1,100	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- melic (MELIC)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	25 25 10 10 15
570: Angelwhine-----	South Slope 30+ P.z.- R022AY021NV	1,400	1,200	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 25 10 20 15
Hawkinspeak-----	Mountain Shoulders 30+ P.z.-R022AY010NV	1,050	850	650	western needlegrass (ACOCO)---- mountain brome (BRMA4)----- mountain big sagebrush (ARTRV)-	40 30 15
Hawkridge-----	Mountain Ridge 30+ P.z.- R022AY011NV	500	300	150	pine needlegrass (ACPI2)----- prairie junegrass (KOCR)----- goldenweed (PYRRO)----- low sagebrush (ARAR8)-----	25 20 5 35
580: Murain-----	Coarse Loamy 16-20 P.z.- R022AY044NV	1,600	1,400	1,000	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 10 20 10
Shorthike-----	South Slope 14-16 P.z.- R022AY043NV	1,400	1,000	600	needlegrass (ACHNA)----- Indian ricegrass (ACHY)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 5 10 15 10
Murain, moist-----	Coarse Loamy 16-20 P.z.- R022AY044NV	1,800	1,400	800	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 10 20 10
581: Murain-----	Coarse Loamy 16-20 P.z.- R022AY044NV	1,600	1,400	1,000	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 10 20 10
Murain-----	Coarse Loamy 16-20 P.z.- R022AY044NV	1,800	1,400	800	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 10 20 10
590: Loope-----	Shallow Loam 16-20 P.z.- R022AY042NV	800	600	400	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	20 5 10 20 10
Heenlake-----	Loamy Slope 14-16 P.z.- R022AY022NV	1,300	1,100	800	Thurber's needlegrass (ACTH7)-- western needlegrass (ACOCO)---- basin wildrye (LECI4)----- muttongrass (POFE)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 15 5 5 10 20 10

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Carshal-----	Eroded Slope 14-20 P.z.- R022AY041NV	200	150	100	mountain big sagebrush (ARTRV)- Thurber's needlegrass (ACTH7)-- antelope bitterbrush (PUTR2)--- Indian ricegrass (ACHY)----- basin wildrye (LECI4)----- other perennial grasses (PPGG)- other shrubs (SSSS)----- other trees (TTTT)-----	15 10 10 5 5 5 5 5
591: Loope-----	Shallow Loam 16-20 P.z.- R022AY042NV	800	600	400	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	20 5 10 20 10
Heenlake-----	Loamy Slope 14-16 P.z.- R022AY022NV	1,300	1,100	800	Thurber's needlegrass (ACTH7)-- western needlegrass (ACOCO)---- basin wildrye (LECI4)----- muttongrass (POFE)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 15 5 5 10 20 10
Celeridge-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)--- curlleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	15 5 5 65 10
592: Loope-----	Shallow Loam 16-20 P.z.- R022AY042NV	800	600	400	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	20 5 10 20 10
Pinew-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	350	-----	---
Heenlake-----	Loamy Slope 14-16 P.z.- R022AY022NV	1,300	1,100	800	Thurber's needlegrass (ACTH7)-- western needlegrass (ACOCO)---- basin wildrye (LECI4)----- muttongrass (POFE)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 15 5 5 10 20 10
600: Snowtell-----	Pinus Contorta/poa-Carex- F022AY127NV	175	100	75	-----	---
Sonorapass-----	Pinus Contorta/poa-Carex- F022AY127NV	175	100	75	-----	---
610: Forsell-----	Pinus Contorta/poa-Carex- F022AY127NV	175	100	75	-----	---
Snowtell-----	Pinus Contorta/poa-Carex- F022AY127NV	175	100	75	-----	---

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
611: Forsell-----	Pinus Contorta/poa-Carex- F022AY127NV	175	100	75	-----	---
Snowtell-----	Pinus Contorta/poa-Carex- F022AY127NV	175	100	75	-----	---
620: Indian Creek-----	Claypan 8-10 P.z.- R026XY025NV	400	300	200	Thurber needlegrass (ACTH7)---- Sandberg bluegrass (POSE)----- Indian ricegrass (ACHY)----- other perennial forbs (PPFF)--- low sagebrush (ARAR8)-----	25 10 5 5 30
630: Olac-----	Claypan 8-10 P.z.- R026XY025NV	400	300	200	Thurber needlegrass (ACTH7)---- Sandberg bluegrass (POSE)----- Indian ricegrass (ACHY)----- other perennial forbs (PPFF)--- low sagebrush (ARAR8)-----	25 10 5 5 30
Flex-----	South Slope 8-12 P.z.- R026XY011NV	1,000	700	400	other perennial forbs (PPFF)--- desert needlegrass (ACSP12)---- Indian ricegrass (ACHY)----- Wyoming big sagebrush (ARTRW8)- green ephedra (EPVI)-----	5 40 5 20 5
Duco-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	300	-----	---
640: Koontz-----	Shallow Loam 10-12 P.z.- R026XY015NV	700	500	350	Thurber needlegrass (ACTH7)---- desert needlegrass (ACSP12)---- Indian ricegrass (ACHY)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	30 20 5 10 20 5
Nosrac-----	Loamy 10-12 P.z.- R026XY010NV	1,000	800	600	Thurber needlegrass (ACTH7)---- basin wildrye (LECI4)----- bluegrass (POA)----- other perennial forbs (PPFF)--- big sagebrush (ARTR2)----- antelope bitterbrush (PUTR2)---	35 5 5 5 20 5
650: Shree-----	Loamy 10-12 P.z.- R026XY010NV	1,000	800	600	Thurber needlegrass (ACTH7)---- basin wildrye (LECI4)----- bluegrass (POA)----- other perennial forbs (PPFF)--- big sagebrush (ARTR2)----- antelope bitterbrush (PUTR2)---	35 5 5 5 20 5
651: Shree-----	Loamy 10-12 P.z.- R026XY010NV	1,000	800	600	Thurber needlegrass (ACTH7)---- basin wildrye (LECI4)----- bluegrass (POA)----- other perennial forbs (PPFF)--- big sagebrush (ARTR2)----- antelope bitterbrush (PUTR2)---	35 5 5 5 20 5

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Holbrook-----	Loamy 10-12 P.z.- R026XY010NV	1,000	800	600	Thurber needlegrass (ACTH7)---- basin wildrye (LECI4)----- bluegrass (POA)----- other perennial forbs (PPFF)--- big sagebrush (ARTR2)----- antelope bitterbrush (PUTR2)---	35 5 5 5 20 5
660: Delhew-----	Gravelly Slope 16+ P.z.- R022AY052NV	1,100	900	700	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- snowberry (SYMPH)-----	25 10 20 10
Grandridge-----	Mountain Ridge 30+ P.z.- R022AY011NV	500	300	150	pine needlegrass (ACPI2)----- prairie junegrass (KOCR)----- goldenweed (PYRRO)----- low sagebrush (ARAR8)-----	25 20 5 35
Bakscratch-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)--- curleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	15 5 5 65 10
670: Springmeyer-----	Loamy 10-12 P.z.- R026XY010NV	1,000	800	600	Thurber needlegrass (ACTH7)---- basin wildrye (LECI4)----- bluegrass (POA)----- other perennial forbs (PPFF)--- big sagebrush (ARTR2)----- antelope bitterbrush (PUTR2)---	35 5 5 5 20 5
671: Springmeyer-----	Loamy 10-12 P.z.- R026XY010NV	1,000	800	600	Thurber needlegrass (ACTH7)---- basin wildrye (LECI4)----- bluegrass (POA)----- other perennial forbs (PPFF)--- big sagebrush (ARTR2)----- antelope bitterbrush (PUTR2)---	35 5 5 5 20 5
Cassiro-----	Loamy 10-12 P.z.- R026XY010NV	1,000	800	600	Thurber needlegrass (ACTH7)---- basin wildrye (LECI4)----- bluegrass (POA)----- other perennial forbs (PPFF)--- big sagebrush (ARTR2)----- antelope bitterbrush (PUTR2)---	35 5 5 5 20 5
680: Rolldown-----	Alpine Ridge-R022AY032NV	200	75	25	bluegrass (POA)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- other shrubs (SSSS)-----	10 10 50 5
Mountpatterson-----	Alpine Ridge-R022AY032NV	350	225	150	bluegrass (POA)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- other shrubs (SSSS)-----	10 10 50 5
700: Coldtree-----	Pinus Albicaulis-Pinus Flexilis/poa-Carex- F022AY126NV	150	100	50	-----	---
710: Bakscratch-----	Mahogany Thicket- R022AY025NV	400	350	200	bluegrass (POA)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- curleaf mountainmahogany (CELE3)----- snowberry (SYMPH)-----	5 5 5 80 5

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Grandridge-----	Mountain Ridge 30+ P.z.- R022AY011NV	500	300	150	pine needlegrass (ACPI2)----- prairie junegrass (KOCR)----- goldenweed (PYRRO)----- low sagebrush (ARAR8)-----	25 20 5 35
McTom-----	Pinus Albicaulis-Pinus Flexilis/poa-Carex- F022AY126NV	150	100	50	-----	---
720: Nohelp-----	Coarse Loamy 16-20 P.z.- R022AY044NV	1,600	1,400	1,000	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 10 20 10
Joenchris-----	Claypan 14-16 P.z.- R022AY049NV	700	500	300	Thurber's needlegrass (ACTH7)-- western needlegrass (ACOCO)---- pine needlegrass (ACPI2)----- other perennial forbs (PPFF)--- low sagebrush (ARAR8)-----	30 10 5 10 25
730: Burchflat-----	Coarse Loamy 16-20 P.z.- R022AY044NV	1,600	1,400	1,000	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 10 20 10
Loope-----	Shallow Loam 16-20 P.z.- R022AY042NV	800	600	400	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	20 5 10 20 10
731: Burchflat-----	Coarse Loamy 16-20 P.z.- R022AY044NV	1,600	1,400	1,000	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 10 20 10
Celeridge-----	Mahogany Thicket- R022AY025NV	400	350	200	bluegrass (POA)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- curleaf mountainmahogany (CELE3)----- snowberry (SYMPH)-----	5 5 5 80 5
Loope-----	Shallow Loam 16-20 P.z.- R022AY042NV	800	600	400	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	20 5 10 20 10
740: Jackflat-----	Gravelly Slope 16+ P.z.- R022AY052NV	1,100	900	700	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- snowberry (SYMPH)-----	25 10 20 10
Grandridge-----	Mountain Ridge 30+ P.z.- R022AY011NV	500	300	150	pine needlegrass (ACPI2)----- prairie junegrass (KOCR)----- goldenweed (PYRRO)----- low sagebrush (ARAR8)-----	25 20 5 35
760: Thiefridge-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)--- curleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	15 5 5 65 10

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Thief ridge-----	Mahogany Thicket- R022AY025NV	1,300	900	700	bluegrass (POA)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- curleaf mountainmahogany (CELE3)----- snowberry (SYMPH)-----	5 5 5 80 5
770: Sweetmount-----	Gravelly Slope 16+ P.z.- R022AY052NV	1,100	900	700	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- snowberry (SYMPH)-----	25 10 20 10
Hawkinspeak-----	South Slope 30+ P.z.- R022AY021NV	1,400	1,200	900	mountain brome (BRMA4)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 25 10 20 15
Hawkridge-----	Mountain Ridge 30+ P.z.- R022AY011NV	500	300	150	pine needlegrass (ACPI2)----- prairie junegrass (KOCR)----- goldenweed (PYRRO)----- low sagebrush (ARAR8)-----	25 20 5 35
780: Granhogany-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)--- curleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	15 5 5 65 10
790: Dab-----	Stony South Slope 16-30 P.z.-R022AY039NV	1,400	1,200	900	spike fescue (FEKI2)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	20 10 5 15 10
Dab-----	Gravelly Loamy Slope 20- 30 P.z.-R022AY045NV	900	700	400	spike fescue (FEKI2)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	25 25 10 15
791: Dab-----	Gravelly Loamy Slope 20- 30 P.z.-R022AY045NV	900	700	400	spike fescue (FEKI2)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	25 25 10 15
Longday-----	Mountain Ridge 30+ P.z.- R022AY011NV	500	300	150	pine needlegrass (ACPI2)----- prairie junegrass (KOCR)----- goldenweed (PYRRO)----- low sagebrush (ARAR8)-----	25 20 5 35
Thief ridge-----	Mahogany Savanna- R022AY024NV	1,300	900	700	needlegrass (STIPA)----- bluegrass (POA)----- other perennial forbs (PPFF)--- curleaf mountainmahogany (CELE3)----- mountain big sagebrush (ARTRV)-	15 5 5 65 10
792: Dab-----	Gravelly Loamy Slope 20- 30 P.z.-R022AY045NV	900	700	400	spike fescue (FEKI2)----- western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	25 25 10 15

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Aspocket-----	Populus Tremuloides/symphoricarpos/bromus Marginatus- Elymus Trachycaulus Ssp. Trachycaulus-F022AY103NV	800	600	400	-----	---
Hawkridge-----	Mountain Ridge 30+ P.z.- R022AY011NV	500	300	150	pine needlegrass (ACPI2)----- prairie junegrass (KOCR)----- goldenweed (PYRRO)----- low sagebrush (ARAR8)-----	25 20 5 35
800: Grandridge-----	Mountain Ridge 30+ P.z.- R022AY011NV	500	300	150	pine needlegrass (ACPI2)----- prairie junegrass (KOCR)----- goldenweed (PYRRO)----- low sagebrush (ARAR8)-----	25 20 5 35
Delhew-----	Gravelly Slope 16+ P.z.- R022AY052NV	1,100	900	700	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- snowberry (SYMPH)-----	25 10 20 10
801: Grandridge-----	Mountain Ridge- R026XY028NV	300	150	75	pine needlegrass (ACPI2)----- bluegrass (POA)----- other perennial forbs (PPFF)--- low sagebrush (ARAR8)-----	20 10 10 35
Delhew-----	Mountain Loam 16+ P.z.- R026XY075NV	900	700	400	spike fescue (FEKI2)----- mountain big sagebrush (ARTRV)- Letterman needlegrass (ACLE9)-- bluegrass (POA)-----	30 20 15 5
Bullville-----	Gravelly South Slope 16+ P.z.-R026XY110NV	1,500	1,200	1,000	western needlegrass (ACOCO)---- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)--- snowberry (SYMPH)-----	15 10 25 15 5
810: Corbett-----	Pinus Jeffreyi/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata-F022AY130NV	350	250	150	-----	---
Toiyabe-----	Pinus Jeffreyi/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata-F022AY130NV	350	250	150	-----	---
820: Freelpeak-----	Alpine Ridge-R022AY032NV	200	75	25	bluegrass (POA)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- other shrubs (SSSS)-----	10 10 50 5
Windyridge-----	Alpine Ridge-R022AY032NV	350	225	150	bluegrass (POA)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- other shrubs (SSSS)-----	10 10 50 5
830: Windyridge-----	Alpine Ridge-R022AY032NV	200	75	25	bluegrass (POA)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- other shrubs (SSSS)-----	10 10 50 5
Freelpeak-----	Alpine Ridge-R022AY032NV	350	225	150	bluegrass (POA)----- needlegrass (ACHNA)----- other perennial forbs (PPFF)--- other shrubs (SSSS)-----	10 10 50 5

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
840: Lavaspring-----	Semi-Wet Meadow- R022AY017NV	3,500	2,000	1,300	sedge (CAREX)----- bluegrass (POA)----- tufted hairgrass (DECE)----- Baltic rush (JUBA)----- creeping bentgrass (AGST2)----- other perennial grasses (PPGG)- other perennial forbs (PPFF)---	45 20 10 5 5 5 10
Trespass-----	Moist Mountain Basin- R022AY054NV	700	500	300	bluegrass (POA)----- sedge (CAREX)----- mat muhly (MURI)----- other perennial forbs (PPFF)--- groundsel (SENEC)----- mountain silver sagebrush (ARCAV2)-----	35 15 5 10 5 25
Lavaspring-----	Wet Meadow-R022AY016NV	4,000	3,500	3,000	Nebraska sedge (CANE2)----- Baltic rush (JUBA)----- tufted hairgrass (DECE)----- other perennial forbs (PPFF)--- other perennial grasses (PPGG)-	60 10 10 5 5
850: Lunder-----	Claypan 10-14 P.z.- R026XY023NV	700	500	350	Thurber needlegrass (ACTH7)---- bluegrass (POA)----- other perennial forbs (PPFF)--- low sagebrush (ARAR8)----- antelope bitterbrush (PUTR2)---	40 15 10 25 5
851: Lunder-----	Claypan 10-14 P.z.- R026XY023NV	700	500	350	Thurber needlegrass (ACTH7)---- bluegrass (POA)----- other perennial forbs (PPFF)--- low sagebrush (ARAR8)----- antelope bitterbrush (PUTR2)---	40 15 10 25 5
Leviathan-----	Loamy Slope 12-14 P.z.- R026XY048NV	1,300	1,100	800	needlegrass (STIPA)----- basin wildrye (LECI4)----- muttongrass (POFE)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	35 5 5 5 20 10
860: Hardnut-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	300	-----	---
Ocashe-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	300	-----	---
870: Epvip-----	Gravelly Loamy Slope 14- 16 P.z.-R026XY105NV	1,400	1,200	900	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- prairie Junegrass (KOMA)----- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)--- snowberry (SYMPH)-----	15 5 5 25 15 5

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
Domehill-----	Claypan 12-14 P.z.- R026XY078NV	475	275	100	Thurber needlegrass (ACTH7)---- prairie Junegrass (KOMA)----- bluegrass (POA)----- low sagebrush (ARAR8)-----	35 10 5 30
Ashflat-----	Ashy Slope 14-16 P.z.- R026XY108NV	700	500	400	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- sedge (CAREX)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)-	15 5 5 10 20
871: Halfash-----	Shallow Loam 12-14 P.z.- R026XY111NV	900	700	500	Thurber's needlegrass (ACTH7)-- bluegrass (POA)----- prairie Junegrass (KOMA)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	15 5 5 10 20 10
Domehill-----	Claypan 12-14 P.z.- R026XY078NV	475	275	100	Thurber needlegrass (ACTH7)---- prairie Junegrass (KOMA)----- bluegrass (POA)----- low sagebrush (ARAR8)-----	35 10 5 30
872: Epvip-----	Gravelly Loamy Slope 14- 16 P.z.-R026XY105NV	1,400	1,200	900	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- prairie Junegrass (KOMA)----- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)--- snowberry (SYMPH)-----	15 5 5 25 15 5
Vetash-----	Gravelly Loamy Slope 14- 16 P.z.-R026XY105NV	1,400	1,200	900	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- prairie Junegrass (KOMA)----- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)--- snowberry (SYMPH)-----	15 5 5 25 15 5
Epvip-----	South Slope 14-16 P.z.- R026XY106NV	1,200	1,000	800	needlegrass (ACHNA)----- Indian ricegrass (ACHY)----- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	25 5 20 15
873: Epvip-----	Gravelly Loamy Slope 14- 16 P.z.-R026XY105NV	1,400	1,200	900	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- prairie Junegrass (KOMA)----- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)--- snowberry (SYMPH)-----	15 5 5 25 15 5
Hardnut-----	Pinus Monophylla/artemisia Tridentata Ssp. Vaseyana-Purshia Tridentata/poa Fendleriana-Achnatherum Thurberianum-F026XY044NV	600	450	300	-----	---
Vetash-----	Gravelly Loamy Slope 14- 16 P.z.-R026XY105NV	1,400	1,200	900	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- prairie Junegrass (KOMA)----- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)--- snowberry (SYMPH)-----	15 5 5 25 15 5
880: Mopana-----	Claypan 12-14 P.z.- R026XY078NV	475	275	100	Thurber needlegrass (ACTH7)---- prairie Junegrass (KOMA)----- bluegrass (POA)----- low sagebrush (ARAR8)-----	35 10 5 30

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
890: Masonic-----	Gravelly Loamy Slope 14- 16 P.z.-R026XY105NV	1,400	1,200	900	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- prairie Junegrass (KOMA)----- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)--- snowberry (SYMPH)-----	15 5 5 25 15 5
Epvip-----	Gravelly Loamy Slope 14- 16 P.z.-R026XY105NV	1,400	1,200	900	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- prairie Junegrass (KOMA)----- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)--- snowberry (SYMPH)-----	15 5 5 25 15 5
Domehill-----	Claypan 12-14 P.z.- R026XY078NV	475	275	100	Thurber needlegrass (ACTH7)---- prairie Junegrass (KOMA)----- bluegrass (POA)----- low sagebrush (ARAR8)-----	35 10 5 30
900: Brokenhoe-----	Gravelly Loamy Slope 14- 16 P.z.-R026XY105NV	1,400	1,200	900	western needlegrass (ACOCO)---- basin wildrye (LECI4)----- prairie Junegrass (KOMA)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	15 5 5 10 25 15
Fisherdig-----	Claypan 12-14 P.z.- R026XY078NV	475	275	100	Thurber's needlegrass (ACTH7)-- low sagebrush (ARAR8)----- other perennial forbs (PPFF)--- prairie Junegrass (KOMA)-----	35 25 10 10
910: Indian Creek-----	Claypan 8-10 P.z.- R026XY025NV	400	300	200	Thurber needlegrass (ACTH7)---- Sandberg bluegrass (POSE)----- Indian ricegrass (ACHY)----- other perennial forbs (PPFF)--- low sagebrush (ARAR8)-----	25 10 5 5 30
Haybourne-----	Loamy 8-10 P.z.- R026XY016NV	800	600	400	desert needlegrass (ACSP12)---- Indian ricegrass (ACHY)----- Thurber needlegrass (ACTH7)---- other perennial forbs (PPFF)--- Wyoming big sagebrush (ARTRW8)- ephedra (EPHED)-----	35 5 5 5 20 5
920: Aquic Torrifluvents-----	Streambank-R026XY073NV	2,000	1,500	1,000	yellow willow (SALU2)----- creeping wildrye (LETR5)----- Nevada bluegrass (PONE3)----- silver buffaloberry (SHAR)----- Woods' rose (ROWO)-----	55 15 10 10 5
Conway-----	Wet Meadow 14+ P.z.- R026XY054NV	3,500	2,200	1,800	tufted hairgrass (DECA18)----- bluegrass (POA)----- sedge (CAREX)----- rush (JUNCU)----- other perennial forbs (PPFF)--- other shrubs (SSSS)-----	40 15 15 5 15 5
Torrifluventic Haploxerolls-----	Loamy 12-14 P.z.- R026XY005NV	1,800	1,500	1,000	needlegrass (ACHNA)----- basin wildrye (LECI4)----- muttongrass (POFE)----- other perennial forbs (PPFF)--- mountain big sagebrush (ARTRV)- antelope bitterbrush (PUTR2)---	40 10 5 10 15 10

TABLE 6.-- Rangeland Ecological Sites, Productivity and Characteristic Vegetation-Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic Vegetation	Species Composition by Weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
930: Lavaspring-----	Semi-Wet Meadow- R022AY017NV	3,500	2,000	1,300	sedge (CAREX)----- bluegrass (POA)----- tufted hairgrass (DECE)----- Baltic rush (JUBA)----- creeping bentgrass (AGST2)----- other perennial grasses (PPGG)- other perennial forbs (PPFF)---	45 20 10 5 5 5 10
Lavaspring-----	Semi-Wet Meadow- R022AY017NV	3,500	2,000	1,300	sedge (CAREX)----- bluegrass (POA)----- tufted hairgrass (DECE)----- Baltic rush (JUBA)----- creeping bentgrass (AGST2)----- other perennial grasses (PPGG)- other perennial forbs (PPFF)---	45 20 10 5 5 5 10
960: Rose Creek-----	Wet Meadow 8-12 P.z.- R027XY004NV	2,500	1,500	1,000	sedge (CAREX)----- Nevada bluegrass (PONE3)----- other perennial forbs (PPFF)--- rush (JUNCU)----- meadow barley (HOBR2)----- other perennial grasses (PPGG)- other shrubs (SSSS)-----	30 20 15 10 5 5 5

TABLE 7.-- Site Index and Annual Productivity

Map symbol and soil name	Potential productivity				Trees to manage
	Common trees	Site Index Base	Site index low-rv-high	Annual production low-rv-high (cu. ft/acre (CMAI))	
101: Fishsnooze-----	limber pine----- whitebark pine-----	--- ---	--- ---	--- ---	limber pine, whitebark pine
102: Fishsnooze-----	limber pine----- whitebark pine-----	--- ---	--- ---	--- ---	limber pine, whitebark pine
110: Jobsis-----	limber pine----- whitebark pine-----	--- ---	--- ---	--- ---	limber pine, whitebark pine
111: Jobsis-----	limber pine----- whitebark pine-----	--- ---	--- ---	--- ---	limber pine, whitebark pine
112: Jobsis-----	whitebark pine-----	---	---	---	whitebark pine
Whittell-----	whitebark pine-----	---	---	---	whitebark pine
113: Whittell-----	whitebark pine-----	---	---	---	whitebark pine
Jobsis-----	whitebark pine-----	---	---	---	whitebark pine
120: Toiyabe-----	Jeffrey pine-----	600	65-65-77	50-57-64	Jeffrey pine
Corbett-----	Jeffrey pine-----	600	65-70-77	50-57-64	Jeffrey pine
121: Toiyabe-----	Jeffrey pine-----	600	65-65-77	50-57-64	Jeffrey pine
Corbett-----	Jeffrey pine-----	600	65-70-77	50-57-64	Jeffrey pine
122: Toiyabe-----	Jeffrey pine-----	600	65-65-77	50-57-64	Jeffrey pine
Corbett-----	Jeffrey pine-----	600	65-70-77	50-57-64	Jeffrey pine
130: Sofgran-----	California red fir-- lodgepole pine-----	50 520	27-29-31 60-68-75	96-101-107 51-58-64	California red fir, lodgepole pine
Klauspeak-----	California red fir-- lodgepole pine-----	50 520	27-29-31 45-52-61	96-104-107 36-43-50	California red fir, lodgepole pine
Temo-----	lodgepole pine-----	520	60-67-75	51-53-64	California red fir, lodgepole pine
131: Sofgran-----	California red fir-- lodgepole pine-----	50 520	27-29-31 60-68-75	96-101-107 51-58-64	California red fir, lodgepole pine
Temo-----	lodgepole pine-----	520	60-67-75	51-53-64	California red fir, lodgepole pine
Shalgran-----	Jeffrey pine-----	600	40-46-48	30-33-36	Jeffrey pine
132: Sofgran-----	California red fir-- lodgepole pine-----	50 520	27-29-31 60-68-75	96-101-107 51-58-64	California red fir, lodgepole pine
Temo-----	lodgepole pine-----	520	60-67-75	51-53-64	California red fir, lodgepole pine
140: Temo-----	lodgepole pine-----	520	60-67-75	51-53-64	California red fir, lodgepole pine

TABLE 7.-- Site Index and Annual Productivity

Map symbol and soil name	Potential productivity				Trees to manage
	Common trees	Site Index Base	Site index low-rv-high	Annual production low-rv-high (cu. ft/acre (CMAI))	
Dagget-----	California red fir-- lodgepole pine-----	50 520	27-29-31 60-68-75	96-101-107 51-58-64	California red fir, lodgepole pine
170: Burnlake-----	Jeffrey pine-----	600	65-75-77	50-57-64	Jeffrey pine
Roadcat-----	lodgepole pine-----	520	45-53-61	36-43-50	lodgepole pine
171: Stumpatil-----	California red fir-- lodgepole pine-----	50 520	27-29-31 45-52-61	96-104-107 36-43-50	California red fir, lodgepole pine
172: Stumpatil-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
173: Stumpatil-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
174: Stumpatil-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
Sonorapass-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
Snowtell-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
180: Shalgran-----	Jeffrey pine-----	600	49-56-64	37-43-50	Jeffrey pine
212: Sofgran-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
Temo-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
220: Hardtil-----	lodgepole pine-----	520	45-53-61	36-43-50	lodgepole pine
Alpineco-----	lodgepole pine-----	520	45-53-61	36-43-50	lodgepole pine
221: Hardtil-----	lodgepole pine-----	520	45-53-61	36-43-50	Jeffrey pine
Alpineco-----	lodgepole pine-----	520	45-53-61	36-43-50	lodgepole pine
222: Hardtil-----	Jeffrey pine-----	600	40-46-48	30-33-36	Jeffrey pine
Alpineco-----	Jeffrey pine-----	600	40-46-48	30-33-36	Jeffrey pine
240: Granylith-----	lodgepole pine-----	520	76-83-90	65-72-79	lodgepole pine
Hargran-----	California red fir-- lodgepole pine-----	50 520	27-29-31 45-52-61	96-104-107 36-43-50	California red fir, lodgepole pine
250: Florand-----	California red fir-- lodgepole pine-----	50 520	27-29-31 45-52-61	96-104-107 36-43-50	California red fir, lodgepole pine
Lostridge-----	California red fir-- lodgepole pine-----	50 520	27-29-31 45-52-61	96-104-107 36-43-50	California red fir, lodgepole pine
Fishsnooze-----	mountain hemlock----	990	60-62-63	---	mountain hemlock
270: Duco-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
Smallcone-----	Jeffrey pine-----	600	40-45-48	30-35-36	Jeffrey pine
Cagle-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon

TABLE 7.-- Site Index and Annual Productivity

Map symbol and soil name	Potential productivity				Trees to manage
	Common trees	Site Index Base	Site index low-rv-high	Annual production low-rv-high (cu. ft/acre (CMAI))	
271: Duco-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
Pinenut-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
320: Franktown-----	Jeffrey pine-----	600	65-70-77	50-57-64	Jeffrey pine
340: Aspocket-----	quaking aspen-----	730	35-40-45	16-18-20	quaking aspen
370: Pinew-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
380: Joecut-----	Jeffrey pine-----	600	65-70-77	50-57-64	Jeffrey pine
Joecut-----	white fir-----	30	30-35-40	51-55-64	white fir
381: Joecut-----	Jeffrey pine-----	600	65-70-77	50-57-64	Jeffrey pine
Joecut-----	white fir-----	30	30-35-40	51-55-64	white fir
382: Joecut-----	Jeffrey pine-----	600	65-70-77	50-57-64	Jeffrey pine
Joecut-----	white fir-----	30	30-35-40	51-55-64	white fir
400: Pinew-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
401: Pinew-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
410: Wolfcut-----	Jeffrey pine-----	600	65-70-77	50-57-64	Jeffrey pine
430: Newcone-----	Jeffrey pine-----	600	40-44-48	30-33-36	Jeffrey pine
440: Joecut-----	white fir-----	30	30-35-40	51-55-64	white fir
460: Toejom-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
Pimogran-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
461: Toejom-----	singleleaf pinyon---	200	15-25-35	1-2-3	singleleaf pinyon
Pimogran-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
462: Toejom-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
Pimogran-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
470: Sumeadow-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
Lostridge-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
471: Sumeadow-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
Sumeadow-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine

TABLE 7.-- Site Index and Annual Productivity

Map symbol and soil name	Potential productivity				Trees to manage
	Common trees	Site Index Base	Site index low-rv-high	Annual production low-rv-high (cu. ft/acre (CMAI))	
480: Aspetill-----	quaking aspen-----	730	35-40-45	16-18-20	quaking aspen
481: Aspetill-----	quaking aspen-----	730	35-40-45	16-18-20	quaking aspen
490: Cloudburst-----	Jeffrey pine-----	600	65-70-77	50-57-64	Jeffrey pine
491: Cloudburst-----	Jeffrey pine-----	600	65-70-77	50-57-64	Jeffrey pine
	Hardtil-----	600	40-46-48	30-33-36	lodgepole pine
511: Snowtell-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
	Forsell-----	520	76-80-90	65-70-79	lodgepole pine
512: Snowtell-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
520: Canfire-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
	Crispy-----	200	65-75-90	7-9-12	singleleaf pinyon
540: Lostcannon-----	quaking aspen-----	730	35-40-45	16-18-20	quaking aspen
592: Pinew-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
600: Snowtell-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
	Sonorapass-----	520	76-80-90	65-70-79	lodgepole pine
610: Forsell-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
	Snowtell-----	520	76-80-90	65-70-79	lodgepole pine
611: Forsell-----	lodgepole pine-----	520	76-80-90	65-70-79	lodgepole pine
	Snowtell-----	520	76-80-90	65-70-79	lodgepole pine
630: Duco-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
700: Coldtree-----	limber pine-----	---	---	---	limber pine, whitebark pine
	whitebark pine-----	---	---	---	
710: McTom-----	limber pine-----	---	---	---	limber pine, whitebark pine
	whitebark pine-----	---	---	---	
810: Corbett-----	Jeffrey pine-----	600	40-46-48	30-33-36	Jeffrey pine
	Toiyabe-----	600	40-46-48	30-33-36	Jeffrey pine
860: Hardnut-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon
	Ocashe-----	200	65-75-90	7-9-12	singleleaf pinyon
873: Hardnut-----	singleleaf pinyon---	200	65-75-90	7-9-12	singleleaf pinyon

TABLE 8.--Forestland Site Preparation

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
101: Fishsnooze-----	20	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments Restrictive layer	1.00 0.50 0.50
102: Fishsnooze-----	20	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments Restrictive layer	0.50 0.50 0.50
110: Jobsis-----	45	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Rock fragments Slope	1.00 0.50
111: Jobsis-----	25	Unsuited Rock fragments Slope	1.00 1.00	Unsuited Slope Rock fragments	1.00 1.00
112: Jobsis-----	45	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Rock fragments Slope	1.00 0.50
Whittell-----	25	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope	0.50
Rock outcrop-----	15	Not rated		Not rated	
113: Whittell-----	45	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Jobsis-----	25	Unsuited Rock fragments Slope	1.00 1.00	Unsuited Slope Rock fragments	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
120: Toiyabe-----	45	Unsuited Rock fragments Slope	1.00 1.00	Unsuited Slope Rock fragments	1.00 1.00
Corbett-----	25	Unsuited Rock fragments Slope	1.00 1.00	Unsuited Slope Rock fragments	1.00 1.00
121: Toiyabe-----	45	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Rock fragments Slope	1.00 0.50

TABLE 8.--Forestland Site Preparation

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Corbett-----	35	Unsuited		Unsuited	
		Rock fragments	1.00	Rock fragments	1.00
		Slope	0.50	Slope	0.50
122: Toiyabe-----	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	1.00
Corbett-----	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	1.00
130: Sofgran-----	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
Klauspeak-----	30	Unsuited		Poorly suited	
		Rock fragments	1.00	Slope	0.50
		Slope	0.50	Rock fragments	0.50
Temo-----	15	Unsuited		Poorly suited	
		Rock fragments	1.00	Slope	0.50
		Slope	0.50	Rock fragments	0.50
131: Sofgran-----	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
Temo-----	25	Unsuited		Poorly suited	
		Rock fragments	1.00	Slope	0.50
		Slope	0.50	Rock fragments	0.50
Shalgran-----	20	Unsuited		Unsuited	
		Rock fragments	1.00	Rock fragments	1.00
		Slope	0.50	Slope	0.50
132: Sofgran-----	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
Temo-----	25	Unsuited		Poorly suited	
		Rock fragments	1.00	Slope	0.50
		Slope	0.50	Rock fragments	0.50
140: Temo-----	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	1.00
Dagget-----	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	1.00
170: Burnlake-----	60	Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Slope	0.50
Roadcat-----	25	Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Slope	0.50

TABLE 8.--Forestland Site Preparation

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
171: Stumpatil-----	65	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope	0.50 0.50
172: Stumpatil-----	85	Unsuited Slope Rock fragments	1.00 1.00	Unsuited Slope Rock fragments	1.00 0.50
173: Stumpatil-----	85	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope	0.50 0.50
174: Stumpatil-----	35	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope	0.50 0.50
Sonorapass-----	30	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope Restrictive layer	0.50 0.50 0.50
Snowtell-----	20	Unsuited Restrictive layer Rock fragments Slope	1.00 1.00 0.50	Unsuited Restrictive layer Rock fragments Slope	1.00 0.50 0.50
180: Shalgran-----	70	Unsuited Rock fragments Slope	1.00 1.00	Unsuited Slope Rock fragments	1.00 1.00
212: Sofgran-----	25	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Temo-----	15	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope	0.50 0.50
220: Hardtil-----	45	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Restrictive layer Rock fragments Slope	1.00 0.50 0.50
Alpineco-----	25	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope	0.50 0.50
221: Hardtil-----	45	Unsuited Slope Rock fragments	1.00 1.00	Unsuited Slope Restrictive layer Rock fragments	1.00 1.00 0.50
Alpineco-----	25	Unsuited Slope Rock fragments	1.00 1.00	Unsuited Slope Rock fragments	1.00 0.50

TABLE 8.--Forestland Site Preparation

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
222: Hardtil-----	40	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Restrictive layer Rock fragments Slope	1.00 0.50 0.50
Alpineco-----	25	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope	0.50 0.50
240: Granylith-----	45	Poorly suited Rock fragments Slope	0.50 0.50	Unsuited Restrictive layer Slope Rock fragments	1.00 0.50 0.50
Hargran-----	25	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope	0.50 0.50
250: Florand-----	40	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope	0.50
Lostridge-----	30	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope	0.50
Fishsnooze-----	15	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments Restrictive layer	0.50 0.50 0.50
270: Duco-----	40	Poorly suited Slope Rock fragments	0.50 0.50	Unsuited Restrictive layer Slope Rock fragments	1.00 0.50 0.50
Smallcone-----	30	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope	0.50
Cagle-----	15	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
271: Duco-----	40	Poorly suited Slope Rock fragments	0.50 0.50	Unsuited Restrictive layer Slope Rock fragments	1.00 0.50 0.50
Pinenut-----	20	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
320: Franktown-----	75	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer Rock fragments	1.00 1.00 0.50
340: Aspocket-----	55	Poorly suited Slope	0.50	Poorly suited Slope	0.50

TABLE 8.--Forestland Site Preparation

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
370: Pinew-----	10	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
380: Joecut-----	40	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Joecut-----	15	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Slope Rock fragments	0.50 0.50
381: Joecut-----	30	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Joecut-----	30	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Slope Rock fragments	0.50 0.50
382: Joecut-----	55	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Joecut-----	30	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Slope Rock fragments	0.50 0.50
400: Pinew-----	35	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
401: Pinew-----	75	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
410: Wolfcut-----	85	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
430: Newcone-----	75	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
440: Joecut-----	10	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Slope Rock fragments	0.50 0.50
460: Toejom-----	45	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Pimogran-----	30	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Rock fragments Slope	1.00 0.50

TABLE 8.--Forestland Site Preparation

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
461: Toejom-----	40	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
Pimogran-----	35	Unsuited Slope Rock fragments	1.00 1.00	Unsuited Slope Rock fragments	1.00 1.00
462: Toejom-----	40	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Pimogran-----	20	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Rock fragments Slope	1.00 0.50
470: Sumeadow-----	55	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Lostridge-----	30	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope	0.50
471: Sumeadow-----	55	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Sumeadow-----	30	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
480: Aspetill-----	60	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope	0.50 0.50
481: Aspetill-----	35	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope	0.50 0.50
490: Cloudburst-----	50	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope	0.50 0.50
491: Cloudburst-----	45	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Hardtil-----	15	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Restrictive layer Rock fragments Slope	1.00 0.50 0.50
511: Snowtell-----	30	Unsuited Restrictive layer Rock fragments Slope	1.00 1.00 0.50	Unsuited Restrictive layer Rock fragments Slope	1.00 0.50 0.50

TABLE 8.--Forestland Site Preparation

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Forsell-----	15	Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Slope	0.50
512: Snowtell-----	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00	Restrictive layer	1.00
		Rock fragments	1.00	Rock fragments	0.50
520: Canfire-----	40	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Slope	1.00
				Rock fragments	0.50
Crispy-----	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
540: Lostcannon-----	40	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
		Slope	0.50	Slope	0.50
592: Pinew-----	30	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
600: Snowtell-----	45	Unsuited		Unsuited	
		Restrictive layer	1.00	Restrictive layer	1.00
		Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Slope	0.50
Sonorapass-----	25	Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50
610: Forsell-----	50	Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Slope	0.50
Snowtell-----	25	Unsuited		Unsuited	
		Restrictive layer	1.00	Restrictive layer	1.00
		Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Slope	0.50
611: Forsell-----	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	0.50
Snowtell-----	25	Unsuited		Unsuited	
		Restrictive layer	1.00	Restrictive layer	1.00
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	0.50
630: Duco-----	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
				Rock fragments	0.50

TABLE 8.--Forestland Site Preparation

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
700: Coldtree-----	75	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
710: McTom-----	15	Unsuited Rock fragments Slope	1.00 1.00	Unsuited Slope Rock fragments	1.00 1.00
810: Corbett-----	55	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Rock fragments Slope	1.00 0.50
Toiyabe-----	20	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Rock fragments Slope	1.00 0.50
860: Hardnut-----	55	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer Rock fragments	1.00 1.00 0.50
Ocashe-----	30	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Restrictive layer Slope Rock fragments	1.00 1.00 0.50
873: Hardnut-----	35	Poorly suited Slope Rock fragments	0.50 0.50	Unsuited Restrictive layer Slope Rock fragments	1.00 0.50 0.50

TABLE 9.--Forestland Planting and Harvesting

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
101: Fishsnooze-----	20	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope	1.00
102: Fishsnooze-----	20	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Well suited	
110: Jobsis-----	45	Poorly suited Rock fragments Sandiness	0.75 0.50	Unsuited Rock fragments Slope Sandiness	1.00 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
111: Jobsis-----	25	Poorly suited Rock fragments Sandiness Slope	0.75 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 1.00 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
112: Jobsis-----	45	Poorly suited Rock fragments Sandiness	0.75 0.50	Unsuited Rock fragments Slope Sandiness	1.00 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
Whittell-----	25	Moderately suited Sandiness Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments Sandiness	0.75 0.50 0.50	Moderately suited Sandiness	0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
113: Whittell-----	45	Moderately suited Sandiness Slope Rock fragments	0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.50 0.50	Poorly suited Slope Sandiness	1.00 0.50
Jobsis-----	25	Poorly suited Rock fragments Sandiness Slope	0.75 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 1.00 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
120: Toiyabe-----	45	Poorly suited Rock fragments Sandiness Slope	0.75 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 1.00 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
Corbett-----	25	Poorly suited Rock fragments Sandiness Slope	0.75 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 1.00 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50

TABLE 9.--Forestland Planting and Harvesting

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
121: Toiyabe-----	45	Poorly suited Rock fragments Sandiness	0.75 0.50	Unsuited Rock fragments Slope Sandiness	1.00 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
Corbett-----	35	Poorly suited Rock fragments Sandiness	0.75 0.50	Unsuited Rock fragments Slope Sandiness	1.00 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
122: Toiyabe-----	50	Poorly suited Rock fragments Slope Sandiness	0.75 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 1.00 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
Corbett-----	20	Poorly suited Rock fragments Slope Sandiness	0.75 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 1.00 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
130: Sofgran-----	40	Moderately suited Rock fragments Sandiness	0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Moderately suited Rock fragments Slope Sandiness	0.50 0.50 0.50
Klauspeak-----	30	Moderately suited Rock fragments Sandiness	0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 0.50 0.50
Temo-----	15	Moderately suited Rock fragments Sandiness	0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 0.50 0.50
131: Sofgran-----	40	Moderately suited Rock fragments Sandiness	0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Moderately suited Rock fragments Slope Sandiness	0.50 0.50 0.50
Temo-----	25	Moderately suited Rock fragments Sandiness	0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 0.50 0.50
Shalgran-----	20	Poorly suited Rock fragments Sandiness	0.75 0.50	Unsuited Rock fragments Slope Sandiness	1.00 1.00 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 0.50 0.50
132: Sofgran-----	50	Moderately suited Rock fragments Sandiness	0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Moderately suited Rock fragments Slope Sandiness	0.50 0.50 0.50
Temo-----	25	Moderately suited Rock fragments Sandiness	0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 0.50 0.50

TABLE 9.--Forestland Planting and Harvesting

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
140: Temo-----	40	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00	Rock fragments	1.00
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
Dagget-----	30	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Rock fragments	1.00
		Sandiness	0.50	Rock fragments	1.00	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
170: Burnlake-----	60	Moderately suited		Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	1.00
		Sandiness	0.50	Slope	0.75	Sandiness	0.50
				Sandiness	0.50		
Roadcat-----	25	Moderately suited		Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	1.00
		Sandiness	0.50	Slope	0.75	Sandiness	0.50
				Sandiness	0.50		
171: Stumpatil-----	65	Moderately suited		Poorly suited		Poorly suited	
		Rock fragments	0.50	Slope	0.75	Rock fragments	1.00
				Rock fragments	0.75		
172: Stumpatil-----	85	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Rock fragments	1.00
		Slope	0.50	Rock fragments	0.75	Slope	1.00
173: Stumpatil-----	85	Moderately suited		Poorly suited		Poorly suited	
		Rock fragments	0.50	Slope	0.75	Rock fragments	1.00
				Rock fragments	0.75		
174: Stumpatil-----	35	Moderately suited		Poorly suited		Poorly suited	
		Rock fragments	0.50	Slope	0.75	Rock fragments	1.00
				Rock fragments	0.75		
Sonorapass-----	30	Moderately suited		Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	1.00
		Sandiness	0.50	Slope	0.75		
				Sandiness	0.50		
Snowtell-----	20	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Restrictive layer	1.00	Rock fragments	1.00
		Rock fragments	0.50	Rock fragments	0.75	Sandiness	0.50
		Sandiness	0.50	Slope	0.75		
				Sandiness	0.50		
180: Shalgran-----	70	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Rock fragments	1.00
		Sandiness	0.50	Rock fragments	1.00	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
212: Sofgran-----	25	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Rock fragments	0.50
		Sandiness	0.50	Rock fragments	0.75	Sandiness	0.50
				Sandiness	0.50		

TABLE 9.--Forestland Planting and Harvesting

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Temo-----	15	Moderately suited Rock fragments Sandiness	0.50 0.50	Poorly suited Rock fragments Slope Sandiness	0.75 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
220: Hardtil-----	45	Moderately suited Rock fragments Sandiness	0.50 0.50	Poorly suited Slope Rock fragments Sandiness	0.75 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
Alpineco-----	25	Moderately suited Rock fragments Sandiness	0.50 0.50	Poorly suited Rock fragments Slope Sandiness	0.75 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
221: Hardtil-----	45	Moderately suited Rock fragments Sandiness Slope	0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
Alpineco-----	25	Moderately suited Rock fragments Sandiness Slope	0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
222: Hardtil-----	40	Moderately suited Rock fragments Sandiness	0.50 0.50	Poorly suited Slope Rock fragments Sandiness	0.75 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
Alpineco-----	25	Moderately suited Rock fragments Sandiness	0.50 0.50	Poorly suited Rock fragments Slope Sandiness	0.75 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
240: Granylith-----	45	Moderately suited Sandiness Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments Sandiness	0.75 0.75 0.50	Moderately suited Rock fragments	0.50
Hargran-----	25	Poorly suited Rock fragments Sandiness	0.75 0.50	Unsuited Rock fragments Slope Sandiness	1.00 0.75 0.50	Poorly suited Rock fragments	1.00
250: Florand-----	40	Moderately suited Rock fragments	0.50	Unsuited Slope Rock fragments	1.00 0.50	Moderately suited Slope	0.50
Lostridge-----	30	Moderately suited Rock fragments	0.50	Unsuited Slope Rock fragments	1.00 0.75	Moderately suited Slope	0.50
Fishsnooze-----	15	Moderately suited Rock fragments	0.50	Unsuited Slope Rock fragments	1.00 0.75	Moderately suited Slope	0.50
270: Duco-----	40	Moderately suited Rock fragments	0.50	Unsuited Slope Rock fragments	1.00 0.75	Moderately suited Slope Rock fragments	0.50 0.50

TABLE 9.--Forestland Planting and Harvesting

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Smallcone-----	30	Poorly suited		Unsuited		Moderately suited	
		Restrictive layer	0.75	Slope	1.00	Slope	0.50
		Sandiness	0.50	Rock fragments	0.75	Sandiness	0.50
		Rock fragments	0.50	Sandiness	0.50		
Cagle-----	15	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
		Stickiness; high plasticity index	0.50	Slope	0.75	Rock fragments	0.50
				Stickiness; high plasticity index	0.50	Slope	0.50
271: Duco-----	40	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Slope	1.00	Slope	0.50
				Rock fragments	0.75	Rock fragments	0.50
Pinenut-----	20	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Slope	1.00	Slope	0.50
		Sandiness	0.50	Rock fragments	0.75	Sandiness	0.50
				Sandiness	0.50	Rock fragments	0.50
320: Franktown-----	75	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00	Rock fragments	0.50
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
340: Aspocket-----	55	Well suited		Poorly suited		Well suited	
				Slope	0.75		
				Rock fragments	0.50		
370: Pinew-----	10	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Slope	1.00	Slope	0.50
				Rock fragments	0.75	Rock fragments	0.50
380: Joecut-----	40	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
				Slope	1.00	Slope	0.50
Joecut-----	15	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
				Slope	1.00	Slope	0.50
381: Joecut-----	30	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
				Slope	1.00	Slope	0.50
Joecut-----	30	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
				Slope	1.00	Slope	0.50
382: Joecut-----	55	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
				Slope	1.00	Slope	0.50
Joecut-----	30	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
				Slope	1.00	Slope	0.50

TABLE 9.--Forestland Planting and Harvesting

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
400: Pinew-----	35	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope Rock fragments	1.00 0.50
401: Pinew-----	75	Moderately suited Rock fragments	0.50	Unsuited Slope Rock fragments	1.00 0.75	Moderately suited Slope Rock fragments	0.50 0.50
410: Wolfcut-----	85	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.75	Moderately suited Rock fragments	0.50
430: Newcone-----	75	Poorly suited Restrictive layer Slope Rock fragments	0.75 0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope	1.00
440: Joecut-----	10	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 1.00	Poorly suited Rock fragments Slope	1.00 0.50
460: Toejom-----	45	Moderately suited Rock fragments Sandiness	0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Moderately suited Slope Sandiness Rock fragments	0.50 0.50 0.50
Pimogran-----	30	Poorly suited Rock fragments Sandiness	0.75 0.50	Unsuited Rock fragments Slope Sandiness	1.00 1.00 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 0.50 0.50
461: Toejom-----	40	Poorly suited Rock fragments Slope Sandiness	0.75 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
Pimogran-----	35	Poorly suited Rock fragments Slope Sandiness	0.75 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 1.00 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
462: Toejom-----	40	Moderately suited Rock fragments Sandiness	0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Moderately suited Slope Sandiness Rock fragments	0.50 0.50 0.50
Pimogran-----	20	Poorly suited Rock fragments Sandiness	0.75 0.50	Unsuited Rock fragments Slope Sandiness	1.00 1.00 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 0.50 0.50
470: Sumeadow-----	55	Moderately suited Rock fragments	0.50	Unsuited Slope Rock fragments	1.00 0.75	Moderately suited Slope Rock fragments	0.50 0.50
Lostridge-----	30	Moderately suited Rock fragments	0.50	Unsuited Slope Rock fragments	1.00 0.75	Moderately suited Slope	0.50

TABLE 9.--Forestland Planting and Harvesting

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
471: Sumeadow-----	55	Moderately suited Rock fragments	0.50	Unsuited Slope Rock fragments	1.00 0.75	Moderately suited Slope Rock fragments	0.50 0.50
Sumeadow-----	30	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Rock fragments	0.50
480: Aspetill-----	60	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.75	Poorly suited Rock fragments	1.00
481: Aspetill-----	35	Moderately suited Rock fragments Sandiness	0.50 0.50	Poorly suited Rock fragments Slope Sandiness	0.75 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
490: Cloudburst-----	50	Poorly suited Rock fragments Sandiness	0.75 0.50	Unsuited Rock fragments Slope Sandiness	1.00 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
491: Cloudburst-----	45	Poorly suited Rock fragments Sandiness	0.75 0.50	Unsuited Rock fragments Slope Sandiness	1.00 1.00 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 0.50 0.50
Hardtil-----	15	Moderately suited Rock fragments Sandiness	0.50 0.50	Poorly suited Slope Rock fragments Sandiness	0.75 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
511: Snowtell-----	30	Unsuited Restrictive layer Rock fragments Sandiness	1.00 0.50 0.50	Unsuited Restrictive layer Rock fragments Slope Sandiness	1.00 0.75 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
Forsell-----	15	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.75	Poorly suited Rock fragments	1.00
512: Snowtell-----	40	Unsuited Restrictive layer Rock fragments Slope Sandiness	1.00 0.50 0.50 0.50	Unsuited Restrictive layer Slope Rock fragments Sandiness	1.00 1.00 0.75 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50
520: Canfire-----	40	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Slope Rock fragments	1.00 0.50
Crispy-----	35	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope Rock fragments	1.00 0.50

TABLE 9.--Forestland Planting and Harvesting

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
540: Lostcannon-----	40	Moderately suited Rock fragments Sandiness	0.50 0.50	Poorly suited Rock fragments Slope Sandiness	0.75 0.75 0.50	Moderately suited Rock fragments Sandiness	0.50 0.50
592: Pinew-----	30	Moderately suited Rock fragments	0.50	Unsuited Slope Rock fragments	1.00 0.75	Moderately suited Slope Rock fragments	0.50 0.50
600: Snowtell-----	45	Unsuited Restrictive layer Rock fragments Sandiness	1.00 0.50 0.50	Unsuited Restrictive layer Rock fragments Slope Sandiness	1.00 0.75 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
Sonorapass-----	25	Moderately suited Rock fragments Sandiness	0.50 0.50	Poorly suited Rock fragments Slope Sandiness	0.75 0.75 0.50	Poorly suited Rock fragments	1.00
610: Forsell-----	50	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.75	Poorly suited Rock fragments	1.00
Snowtell-----	25	Unsuited Restrictive layer Rock fragments Sandiness	1.00 0.50 0.50	Unsuited Restrictive layer Rock fragments Slope Sandiness	1.00 0.75 0.75 0.50	Poorly suited Rock fragments Sandiness	1.00 0.50
611: Forsell-----	50	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Rock fragments Slope	1.00 1.00
Snowtell-----	25	Unsuited Restrictive layer Rock fragments Sandiness Slope	1.00 0.50 0.50 0.50	Unsuited Restrictive layer Slope Rock fragments Sandiness	1.00 1.00 0.75 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
630: Duco-----	20	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope Rock fragments	1.00 0.50
700: Coldtree-----	75	Moderately suited Sandiness Rock fragments Slope	0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Slope Sandiness Rock fragments	1.00 0.50 0.50
710: McTom-----	15	Poorly suited Rock fragments Sandiness Slope	0.75 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 1.00 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
810: Corbett-----	55	Poorly suited Rock fragments Sandiness	0.75 0.50	Unsuited Rock fragments Slope Sandiness	1.00 1.00 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 0.50 0.50

TABLE 9.--Forestland Planting and Harvesting

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Toiyabe-----	20	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
		Sandiness	0.50	Slope	1.00	Slope	0.50
				Sandiness	0.50	Sandiness	0.50
860: Hardnut-----	55	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00	Rock fragments	0.50
Ocashe-----	30	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	0.75	Sandiness	0.50
		Slope	0.50	Sandiness	0.50	Rock fragments	0.50
873: Hardnut-----	35	Poorly suited		Unsuited		Moderately suited	
		Rock fragments	0.75	Rock fragments	1.00	Slope	0.50
				Slope	1.00	Rock fragments	0.50

TABLE 10.--Damage by Fire and Seedling Mortality on Forestland

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
101: Fishsnooze-----	20	Moderate Texture/slope/sur- face depth/rock fragments	0.50	Low	
102: Fishsnooze-----	20	Moderate Texture/surface depth/rock fragments	0.50	Low	
110: Jobsis-----	45	Moderate Texture/rock fragments	0.50	Low	
111: Jobsis-----	25	Low		Low	
112: Jobsis-----	45	Moderate Texture/rock fragments	0.50	Low	
Whittell-----	25	Moderate Texture/rock fragments	0.50	High Available water	1.00
Rock outcrop-----	15	Not rated		Not rated	
113: Whittell-----	45	High Texture/slope/roc- k fragments	1.00	High Available water	1.00
Jobsis-----	25	Low		Low	
Rock outcrop-----	15	Not rated		Not rated	
120: Toiyabe-----	45	High Texture/rock fragments	1.00	Low	
Corbett-----	25	Moderate Texture/rock fragments	0.50	Low	
121: Toiyabe-----	45	High Texture/rock fragments	1.00	Low	

TABLE 10.--Damage by Fire and Seedling Mortality on Forestland

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Corbett-----	35	Moderate Texture/rock fragments	0.50	Low	
122: Toiyabe-----	50	High Texture/rock fragments	1.00	Low	
Corbett-----	20	Moderate Texture/rock fragments	0.50	Low	
130: Sofgran-----	40	High Texture/slope/sur face depth	1.00	Low	
Klauspeak-----	30	Moderate Texture/slope/roc k fragments	0.50	Low	
Temo-----	15	High Texture/rock fragments	1.00	Low	
131: Sofgran-----	40	High Texture/slope/sur face depth	1.00	Low	
Temo-----	25	High Texture/rock fragments	1.00	Low	
Shalgran-----	20	High Texture/slope/sur face depth	1.00	Low	
132: Sofgran-----	50	High Texture/slope/sur face depth	1.00	Low	
Temo-----	25	High Texture/rock fragments	1.00	Low	
140: Temo-----	40	High Texture/rock fragments	1.00	Low	
Dagget-----	30	Low		Low	
170: Burnlake-----	60	Low		Low	
Roadcat-----	25	Moderate Texture/rock fragments	0.50	Low	
171: Stumpatil-----	65	Moderate Texture/rock fragments	0.50	Low	

TABLE 10.--Damage by Fire and Seedling Mortality on Forestland

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
172: Stumpatil-----	85	Low		Low	
173: Stumpatil-----	85	Moderate Texture/rock fragments	0.50	Low	
174: Stumpatil-----	35	Moderate Texture/rock fragments	0.50	Low	
Sonorapass-----	30	Moderate Texture/rock fragments	0.50	Low	
Snowtell-----	20	Low		Low	
180: Shalgran-----	70	High Texture/slope/sur face depth	1.00	Low	
212: Sofgran-----	25	High Texture/surface depth/rock fragments	1.00	Low	
Temo-----	15	High Texture/rock fragments	1.00	Low	
220: Hardtil-----	45	Low		High Wetness	1.00
Alpineco-----	25	Low		Low	
221: Hardtil-----	45	High Texture/slope/sur face depth	1.00	High Wetness	1.00
Alpineco-----	25	High Texture/slope/sur face depth	1.00	Low	
222: Hardtil-----	40	Low		High Wetness	1.00
Alpineco-----	25	Low		Low	
240: Granylith-----	45	Low		High Wetness	1.00
Hargran-----	25	Moderate Texture/rock fragments	0.50	Low	
250: Florand-----	40	Low		Low	

TABLE 10.--Damage by Fire and Seedling Mortality on Forestland

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Lostridge-----	30	High Texture/slope/sur face depth	1.00	Low	
Fishsnooze-----	15	High Texture/slope/sur face depth	1.00	Low	
270: Duco-----	40	High Texture/slope/sur face depth/rock fragments	1.00	Low	
Smallcone-----	30	High Texture/slope/sur face depth	1.00	Low	
Cagle-----	15	Low		Low	
271: Duco-----	40	High Texture/slope/sur face depth/rock fragments	1.00	Low	
Pinenut-----	20	Low		Low	
320: Franktown-----	75	Moderate Texture/slope/roc k fragments	0.50	Low	
340: Aspocket-----	55	Low Texture/rock fragments	0.10	Low	
370: Pinew-----	10	Low		Low	
380: Joecut-----	40	Low		Low	
Joecut-----	15	Low		Low	
381: Joecut-----	30	Low		Low	
Joecut-----	30	Low		Low	
382: Joecut-----	55	Low		Low	
Joecut-----	30	Low		Low	
400: Pinew-----	35	Low		Low	
401: Pinew-----	75	Low		Low	
410: Wolfcut-----	85	Moderate Texture/surface depth/rock fragments	0.50	Low	

TABLE 10.--Damage by Fire and Seedling Mortality on Forestland

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
430: Newcone-----	75	High Texture/slope/sur face depth/rock fragments	1.00	Low	
440: Joecut-----	10	Low		Low	
460: Toejom-----	45	Moderate Texture/rock fragments	0.50	Low	
Pimogran-----	30	Moderate Texture/rock fragments	0.50	Low	
461: Toejom-----	40	Moderate Texture/rock fragments	0.50	Low	
Pimogran-----	35	Moderate Texture/rock fragments	0.50	Low	
462: Toejom-----	40	Moderate Texture/rock fragments	0.50	Low	
Pimogran-----	20	Moderate Texture/rock fragments	0.50	Low	
470: Sumeadow-----	55	Low		Low	
Lostridge-----	30	High Texture/slope/sur face depth	1.00	Low	
471: Sumeadow-----	55	Low		Low	
Sumeadow-----	30	Moderate Texture/surface depth/rock fragments	0.50	Low	
480: Aspetill-----	60	Low		Low	
481: Aspetill-----	35	Moderate Texture/rock fragments	0.50	Low	
490: Cloudburst-----	50	Moderate Texture/rock fragments	0.50	Low	
491: Cloudburst-----	45	Low		Low	

TABLE 10.--Damage by Fire and Seedling Mortality on Forestland

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Hardtil-----	15	Low		High Wetness	1.00
511: Snowtell-----	30	Low		Low	
Forsell-----	15	Low		Low	
512: Snowtell-----	40	High Texture/slope/sur face depth	1.00	Low	
520: Canfire-----	40	High Texture/slope/sur face depth/rock fragments	1.00	Low	
Crispy-----	35	Moderate Texture/slope/roc k fragments	0.50	Low	
540: Lostcannon-----	40	Moderate Texture/rock fragments	0.50	Low	
592: Pinew-----	30	Low		Low	
600: Snowtell-----	45	Low		Low	
Sonorapass-----	25	Moderate Texture/rock fragments	0.50	Low	
610: Forsell-----	50	Low		Low	
Snowtell-----	25	Low		Low	
611: Forsell-----	50	High Texture/slope/sur face depth	1.00	Low	
Snowtell-----	25	High Texture/slope/sur face depth	1.00	Low	
630: Duco-----	20	Low		Low	
700: Coldtree-----	75	High Texture/slope/sur face depth	1.00	Low	
710: McTom-----	15	Moderate Texture/rock fragments	0.50	Low	

TABLE 10.--Damage by Fire and Seedling Mortality on Forestland

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
810: Corbett-----	55	Moderate Texture/rock fragments	0.50	Low	
Toiyabe-----	20	High Texture/rock fragments	1.00	Low	
860: Hardnut-----	55	Low		Low	
Ocashe-----	30	High Texture/slope/sur face depth/rock fragments	1.00	Low	
873: Hardnut-----	35	Low		Low	

TABLE 11.--Haul Roads, Log Landings, and Soil Rutting on Forestland

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
101: Fishsnooze-----	20	Severe Slope	1.00	Poorly suited Slope	1.00	Slight Strength	0.10
102: Fishsnooze-----	20	Moderate Restrictive layer Slope	0.50 0.50	Poorly suited Slope	1.00	Slight Strength	0.10
110: Jobsis-----	45	Severe Stoniness Slope Sandiness	1.00 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
111: Jobsis-----	25	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
112: Jobsis-----	45	Severe Stoniness Slope Sandiness	1.00 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
Whittell-----	25	Moderate Landslides Slope Sandiness	0.50 0.50 0.50	Poorly suited Slope Sandiness Landslides	1.00 0.50 0.50	Slight Strength	0.10
Rock outcrop-----	15	Not rated		Not rated		Not rated	
113: Whittell-----	45	Severe Slope Landslides	1.00 0.50	Poorly suited Slope Sandiness Landslides	1.00 0.50 0.50	Slight Strength	0.10
Jobsis-----	25	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
120: Toiyabe-----	45	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
Corbett-----	25	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10

TABLE 11.--Haul Roads, Log Landings, and Soil Rutting on Forestland

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
121: Toiyabe-----	45	Severe Stoniness Slope Sandiness	1.00 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
Corbett-----	35	Severe Stoniness Slope Sandiness	1.00 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
122: Toiyabe-----	50	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
Corbett-----	20	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
130: Sofgran-----	40	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50	Moderate Low strength	0.50
Klauspeak-----	30	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
Temo-----	15	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
131: Sofgran-----	40	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50	Moderate Low strength	0.50
Temo-----	25	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
Shalgran-----	20	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
132: Sofgran-----	50	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50	Moderate Low strength	0.50
Temo-----	25	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50

TABLE 11.--Haul Roads, Log Landings, and Soil Rutting on Forestland

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
140: Temo-----	40	Severe Slope Stoniness	1.00 1.00	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
Dagget-----	30	Severe Slope Stoniness	1.00 1.00	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50	Slight Strength	0.10
170: Burnlake-----	60	Moderate Stoniness Slope Sandiness	0.50 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
Roadcat-----	25	Moderate Stoniness Slope Sandiness	0.50 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
171: Stumpatil-----	65	Moderate Stoniness Slope Sandiness	0.50 0.50 0.50	Poorly suited Rock fragments Slope	1.00 1.00	Moderate Low strength	0.50
172: Stumpatil-----	85	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 1.00	Moderate Low strength	0.50
173: Stumpatil-----	85	Moderate Stoniness Slope Sandiness	0.50 0.50 0.50	Poorly suited Rock fragments Slope	1.00 1.00	Moderate Low strength	0.50
174: Stumpatil-----	35	Moderate Stoniness Slope Sandiness	0.50 0.50 0.50	Poorly suited Rock fragments Slope	1.00 1.00	Moderate Low strength	0.50
Sonorapass-----	30	Severe Restrictive layer Stoniness Slope Sandiness	1.00 0.50 0.50 0.50	Poorly suited Rock fragments Slope	1.00 1.00	Moderate Low strength	0.50
Snowtell-----	20	Severe Restrictive layer Stoniness Slope Sandiness	1.00 0.50 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
180: Shalgran-----	70	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
212: Sofgran-----	25	Moderate Slope Stoniness Sandiness	0.50 0.50 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50	Moderate Low strength	0.50

TABLE 11.--Haul Roads, Log Landings, and Soil Rutting on Forestland

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Temo-----	15	Moderate Stoniness Slope Sandiness	0.50 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
220: Hardtil-----	45	Severe Restrictive layer Stoniness Slope Sandiness	1.00 0.50 0.50 0.50	Poorly suited Rock fragments Slope Wetness Sandiness	1.00 1.00 0.50 0.50	Moderate Low strength	0.50
Alpineco-----	25	Moderate Stoniness Slope Restrictive layer Sandiness	0.50 0.50 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
221: Hardtil-----	45	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Wetness Sandiness	1.00 1.00 0.50 0.50	Moderate Low strength	0.50
Alpineco-----	25	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50	Slight Strength	0.10
222: Hardtil-----	40	Severe Restrictive layer Stoniness Slope Sandiness	1.00 0.50 0.50 0.50	Poorly suited Rock fragments Slope Wetness Sandiness	1.00 1.00 0.50 0.50	Moderate Low strength	0.50
Alpineco-----	25	Moderate Stoniness Slope Restrictive layer Sandiness	0.50 0.50 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
240: Granylith-----	45	Severe Restrictive layer Slope Stoniness Sandiness	1.00 0.50 0.50 0.50	Poorly suited Slope Rock fragments Wetness	1.00 0.50 0.50	Moderate Low strength	0.50
Hargran-----	25	Moderate Stoniness Restrictive layer Slope Sandiness	0.50 0.50 0.50 0.50	Poorly suited Rock fragments Slope	1.00 1.00	Moderate Low strength	0.50
250: Florand-----	40	Severe Slope	1.00	Poorly suited Slope	1.00	Slight Strength	0.10
Lostridge-----	30	Severe Slope	1.00	Poorly suited Slope	1.00	Slight Strength	0.10
Fishsnooze-----	15	Severe Slope	1.00	Poorly suited Slope	1.00	Slight Strength	0.10

TABLE 11.--Haul Roads, Log Landings, and Soil Rutting on Forestland

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
270: Duco-----	40	Severe Restrictive layer Slope Stoniness	1.00 0.50 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Smallcone-----	30	Severe Slope	1.00	Poorly suited Slope Sandiness	1.00 0.50	Slight Strength	0.10
Cagle-----	15	Moderate Slope Stoniness	0.50 0.50	Poorly suited Slope Low strength Rock fragments	1.00 0.50 0.50	Moderate Low strength	0.50
271: Duco-----	40	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Pinenut-----	20	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Sandiness Rock fragments	1.00 0.50 0.50	Moderate Low strength	0.50
320: Franktown-----	75	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50	Slight Strength	0.10
340: Aspocket-----	55	Moderate Slope	0.50	Poorly suited Slope	1.00	Moderate Low strength	0.50
370: Pinew-----	10	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
380: Joecut-----	40	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 1.00	Slight Strength	0.10
Joecut-----	15	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 1.00	Slight Strength	0.10
381: Joecut-----	30	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 1.00	Slight Strength	0.10
Joecut-----	30	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 1.00	Slight Strength	0.10
382: Joecut-----	55	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 1.00	Slight Strength	0.10
Joecut-----	30	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 1.00	Slight Strength	0.10

TABLE 11.--Haul Roads, Log Landings, and Soil Rutting on Forestland

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
400: Pinew-----	35	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
401: Pinew-----	75	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
410: Wolfcut-----	85	Moderate Stoniness Slope	0.50 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
430: Newcone-----	75	Severe Slope	1.00	Poorly suited Slope	1.00	Slight Strength	0.10
440: Joecut-----	10	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 1.00	Slight Strength	0.10
460: Toejom-----	45	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Sandiness Rock fragments	1.00 0.50 0.50	Moderate Low strength	0.50
Pimogran-----	30	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
461: Toejom-----	40	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50	Moderate Low strength	0.50
Pimogran-----	35	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
462: Toejom-----	40	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Sandiness Rock fragments	1.00 0.50 0.50	Moderate Low strength	0.50
Pimogran-----	20	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
470: Sumeadow-----	55	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Lostridge-----	30	Severe Slope	1.00	Poorly suited Slope	1.00	Slight Strength	0.10

TABLE 11.--Haul Roads, Log Landings, and Soil Rutting on Forestland

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
471: Sumeadow-----	55	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Sumeadow-----	30	Moderate Stoniness	0.50	Moderately suited Slope Rock fragments	0.50 0.50	Slight Strength	0.10
480: Aspetill-----	60	Moderate Stoniness Slope	0.50 0.50	Poorly suited Rock fragments Slope	1.00 1.00	Slight Strength	0.10
481: Aspetill-----	35	Moderate Stoniness Slope Sandiness	0.50 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
490: Cloudburst-----	50	Severe Stoniness Slope Sandiness	1.00 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
491: Cloudburst-----	45	Severe Slope Stoniness	1.00 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
Hardtil-----	15	Severe Restrictive layer Stoniness Slope Sandiness	1.00 0.50 0.50 0.50	Poorly suited Rock fragments Slope Wetness Sandiness	1.00 1.00 0.50 0.50	Moderate Low strength	0.50
511: Snowtell-----	30	Severe Restrictive layer Stoniness Slope Sandiness	1.00 0.50 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
Forsell-----	15	Moderate Stoniness Slope	0.50 0.50	Poorly suited Rock fragments Slope	1.00 1.00	Slight Strength	0.10
512: Snowtell-----	40	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
520: Canfire-----	40	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Moderate Low strength	0.50
Crispy-----	35	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10

TABLE 11.--Haul Roads, Log Landings, and Soil Rutting on Forestland

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
540: Lostcannon-----	40	Moderate Stoniness Slope Sandiness	0.50 0.50 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50	Moderate Low strength	0.50
592: Pinew-----	30	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
600: Snowtell-----	45	Severe Restrictive layer Stoniness Slope Sandiness	1.00 0.50 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
Sonorapass-----	25	Severe Restrictive layer Stoniness Slope Sandiness	1.00 0.50 0.50 0.50	Poorly suited Rock fragments Slope	1.00 1.00	Moderate Low strength	0.50
610: Forsell-----	50	Moderate Stoniness Slope	0.50 0.50	Poorly suited Rock fragments Slope	1.00 1.00	Slight Strength	0.10
Snowtell-----	25	Severe Restrictive layer Stoniness Slope Sandiness	1.00 0.50 0.50 0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
611: Forsell-----	50	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 1.00	Slight Strength	0.10
Snowtell-----	25	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50	Moderate Low strength	0.50
630: Duco-----	20	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
700: Coldtree-----	75	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Sandiness Rock fragments	1.00 0.50 0.50	Slight Strength	0.10
710: McTom-----	15	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
810: Corbett-----	55	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10

TABLE 11.--Haul Roads, Log Landings, and Soil Rutting on Forestland

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Toiyabe-----	20	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50	Slight Strength	0.10
860: Hardnut-----	55	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Ocashe-----	30	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Sandiness Rock fragments	1.00 0.50 0.50	Slight Strength	0.10
873: Hardnut-----	35	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10

TABLE 12.--Hazard of Erosion and Suitability for Roads on Forestland

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
101: Fishsnooze-----	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
102: Fishsnooze-----	20	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
110: Jobsis-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
111: Jobsis-----	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
112: Jobsis-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
Whittell-----	25	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Sandiness Landslides	1.00 0.50 0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
113: Whittell-----	45	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Landslides	1.00 0.50 0.50
Jobsis-----	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
120: Toiyabe-----	45	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
Corbett-----	25	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50

TABLE 12.--Hazard of Erosion and Suitability for Roads on Forestland

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
121: Toiyabe-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
Corbett-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
122: Toiyabe-----	50	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
Corbett-----	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
130: Sofgran-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
Klauspeak-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50
Temo-----	15	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50
131: Sofgran-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
Temo-----	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50
Shalgran-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
132: Sofgran-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
Temo-----	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50

TABLE 12.--Hazard of Erosion and Suitability for Roads on Forestland

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
140: Temo-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50
Dagget-----	30	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50
170: Burnlake-----	60	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
Roadcat-----	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
171: Stumpatil-----	65	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope	1.00 1.00
172: Stumpatil-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
173: Stumpatil-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope	1.00 1.00
174: Stumpatil-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope	1.00 1.00
Sonorapass-----	30	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Slope	1.00 1.00
Snowtell-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
180: Shalgran-----	70	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
212: Sofgran-----	25	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
Temo-----	15	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50

TABLE 12.--Hazard of Erosion and Suitability for Roads on Forestland

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
220: Hardtil-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Wetness Sandiness	1.00 1.00 0.50 0.50
Alpineco-----	25	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
221: Hardtil-----	45	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Wetness Sandiness	1.00 1.00 0.50 0.50
Alpineco-----	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50
222: Hardtil-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Wetness Sandiness	1.00 1.00 0.50 0.50
Alpineco-----	25	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
240: Granylith-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Wetness	1.00 0.50 0.50
Hargran-----	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope	1.00 1.00
250: Florand-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Lostridge-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Fishsnooze-----	15	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
270: Duco-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Smallcone-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50

TABLE 12.--Hazard of Erosion and Suitability for Roads on Forestland

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Cagle-----	15	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Rock fragments	1.00 0.50 0.50
271: Duco-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Pinenut-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Rock fragments	1.00 0.50 0.50
320: Franktown-----	75	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
340: Aspocket-----	55	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
370: Pinew-----	10	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
380: Joecut-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
Joecut-----	15	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
381: Joecut-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
Joecut-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
382: Joecut-----	55	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
Joecut-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
400: Pinew-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
401: Pinew-----	75	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50

TABLE 12.--Hazard of Erosion and Suitability for Roads on Forestland

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
410: Wolfcut-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
430: Newcone-----	75	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
440: Joecut-----	10	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
460: Toejom-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Rock fragments	1.00 0.50 0.50
Pimogran-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
461: Toejom-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
Pimogran-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
462: Toejom-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Rock fragments	1.00 0.50 0.50
Pimogran-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
470: Sumeadow-----	55	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Lostridge-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
471: Sumeadow-----	55	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Sumeadow-----	30	Slight		Slight		Moderately suited Slope Rock fragments	0.50 0.50

TABLE 12.--Hazard of Erosion and Suitability for Roads on Forestland

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
480: Aspetill-----	60	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope	1.00 1.00
481: Aspetill-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
490: Cloudburst-----	50	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
491: Cloudburst-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
Hardtil-----	15	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Wetness Sandiness	1.00 1.00 0.50 0.50
511: Snowtell-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
Forsell-----	15	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope	1.00 1.00
512: Snowtell-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50
520: Canfire-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Crispy-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
540: Lostcannon-----	40	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
592: Pinew-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50

TABLE 12.--Hazard of Erosion and Suitability for Roads on Forestland

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
600: Snowtell-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
Sonorapass-----	25	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Slope	1.00 1.00
610: Forsell-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope	1.00 1.00
Snowtell-----	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
611: Forsell-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
Snowtell-----	25	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 1.00 0.50
630: Duco-----	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
700: Coldtree-----	75	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Rock fragments	1.00 0.50 0.50
710: McTom-----	15	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
810: Corbett-----	55	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
Toiyabe-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Sandiness	1.00 1.00 0.50
860: Hardnut-----	55	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Ocashe-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness Rock fragments	1.00 0.50 0.50

TABLE 12.--Hazard of Erosion and Suitability for Roads on Forestland

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
873: Hardnut-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50

TABLE 13.--Urban and Recreation (Part 1)

Pacific Southwest MLRA Office Interpretations

The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only three highest value limitations are listed. There may be more limitations. Fine earth fractions and coarse fragments are reported on a weight basis. A brief rating criteria summary and abbreviations are listed on the last page of this report.

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
100: Lithnip-----	40	Limitations Slopes > 15% Fragments (<3") > 50% Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 15% Fragments (<3") > 50% Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Hawkinspeak-----	30	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Fragments >10" >3% Surface fragments (<3") >25%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
101: Lithnip, moist-----	40	Limitations Slopes > 15% Fragments (<3") > 50% Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 15% Fragments (<3") > 50% Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Rock Outcrop-----	25	Not rated		Not rated		Not rated	
Fishsnooze-----	20	Limitations Slopes > 15% Fragments (<3") > 50%	1.00 1.00	Limitations Slopes > 15% Fragments (<3") > 50%	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock 20-40" and slope > 2%	1.00 1.00 0.50
102: Lithnip-----	40	Limitations Fragments (<3") > 50% Bedrock depth < 20" Slopes > 15%	1.00 1.00 1.00	Limitations Fragments (<3") > 50% Bedrock depth < 20" Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Rock Outcrop-----	25	Not rated		Not rated		Not rated	
Fishsnooze-----	20	Limitations Fragments (<3") > 50% Slopes > 15%	1.00 1.00	Limitations Fragments (<3") > 50% Slopes > 15%	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock 20-40" and slope > 2%	1.00 1.00 0.50

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
103: Lithnip-----	40	Limitations Slopes > 15% Fragments (<3") > 50% Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 15% Fragments (<3") > 50% Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Meiss-----	30	Limitations Slopes > 15% Bedrock depth < 20" Very dusty	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Very dusty	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Surface fragments (<3") >25%	1.00 1.00 1.00
Hawkinspeak-----	15	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Fragments >10" >3% Surface fragments (<3") >25%	1.00 1.00 1.00
110: Jobsis-----	45	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") 25-50%	1.00 1.00 0.74	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") 25-50%	1.00 1.00 0.74	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Whittell-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
111: Whittell-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Jobsis-----	25	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.74	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.74	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
112: Jobsis-----	45	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") 25-50%	1.00 1.00 0.74	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") 25-50%	1.00 1.00 0.74	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Whittell-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
113: Whittell-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
Jobsis-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.74	Fragments (<3") 25-50%	0.74	Fragments >10" >3%	1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
120: Toiyabe-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Fragments > 3" > 30%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Bedrock depth < 20"	1.00
Corbett-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Surface sand fractions 70 - 90% by wt.	0.41	Surface sand fractions 70 - 90% by wt.	0.41	Fragments > 3" > 30%	1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
121: Toiyabe-----	45	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments > 3" > 30%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock depth < 20"	1.00
Corbett-----	35	Limitations Fragments >10" >3%	1.00	Limitations Fragments >10" >3%	1.00	Limitations Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
		Surface sand fractions 70 - 90% by wt.	0.41	Surface sand fractions 70 - 90% by wt.	0.41	Fragments > 3" > 30%	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
122: Toiyabe-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Fragments > 3" > 30%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Bedrock depth < 20"	1.00
Corbett-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Surface sand fractions 70 - 90% by wt.	0.41	Surface sand fractions 70 - 90% by wt.	0.41	Fragments > 3" > 30%	1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
130: Sofgran-----	40	Limitations Slopes > 15% Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.74	Limitations Slopes > 15% Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.74	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Klauspeak-----	30	Limitations Slopes > 15% Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.84	Limitations Slopes > 15% Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.84	Limitations Slopes > 6% Fragments >10" >3% Surface fragments (<3") >25%	1.00 1.00 1.00
Temo-----	15	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
131: Sofgran-----	40	Limitations Slopes > 15% Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.74	Limitations Slopes > 15% Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.74	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Temo-----	25	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Shalgran-----	20	Limitations Slopes > 15% Surface sand fractions > 90% by wt. Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Surface sand fractions > 90% by wt.	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Surface sand fractions > 90% by wt.	1.00 1.00 1.00
132: Sofgran-----	50	Limitations Slopes > 15% Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.74	Limitations Slopes > 15% Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.74	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Temo-----	25	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
140: Temo-----	40	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Dagget-----	30	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.74	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.74	Limitations Slopes > 6% Fragments >10" >3% Surface fragments (<3") >25%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
150: Mottskel-----	85	Limitations Flooding >= rare Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.82	Limitations Fragments >10" >3% Surface sand fractions 70 - 90% by wt. Fragments >3" 25 to 75%	1.00 0.82 0.18	Limitations Fragments > 3" > 30% Fragments >10" >3% Slopes > 6%	1.00 1.00 1.00
160: Hopeval-----	50	Limitations Saturation < 18" depth Flooding >= rare Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Saturation < 12" depth Organic surface layer >= 4" thick	1.00 1.00	Limitations Saturation < 18" depth Organic surface layer >= 4" thick Slopes 2 to 6%	1.00 1.00 0.74
Hopeval-----	35	Limitations Saturation < 18" depth Flooding >= rare	1.00 1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 18" depth Slopes 2 to 6% Occasional flooding	1.00 0.74 0.50
162: Corralval-----	45	Limitations Flooding >= rare Fragments (<3") > 50% Saturation from 18 to 30" depth	1.00 1.00 0.01	Limitations Fragments (<3") > 50%	1.00	Limitations Surface fragments (<3") >25% Slopes 2 to 6% Saturation from 18 to 30" depth	1.00 0.50 0.01
Hopeval-----	45	Limitations Saturation < 18" depth Flooding >= rare	1.00 1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 18" depth Slopes 2 to 6% Occasional flooding	1.00 0.50 0.50
170: Burnlake-----	60	Limitations Fragments (<3") > 50% Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Fragments (<3") > 50% Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Roadcat-----	25	Limitations Fragments (<3") > 50%	1.00	Limitations Fragments (<3") > 50%	1.00	Limitations Surface fragments (<3") >25%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
171: Stumpatil-----	65	Limitations Fragments >10" >3%	1.00	Limitations Fragments >10" >3%	1.00	Limitations Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.97	Fragments (<3") 25-50%	0.97	Fragments >10" >3%	1.00
Morscour-----	20	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Bedrock depth < 20"	1.00
172: Stumpatil-----	85	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.97	Fragments (<3") 25-50%	0.97	Fragments >10" >3%	1.00
173: Stumpatil-----	85	Limitations Fragments >10" >3%	1.00	Limitations Fragments >10" >3%	1.00	Limitations Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.97	Fragments (<3") 25-50%	0.97	Fragments >10" >3%	1.00
174: Stumpatil-----	35	Limitations Fragments >10" >3%	1.00	Limitations Fragments >10" >3%	1.00	Limitations Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.97	Fragments (<3") 25-50%	0.97	Fragments >10" >3%	1.00
Sonorapass-----	30	Limitations Fragments >10" >3%	1.00	Limitations Fragments >10" >3%	1.00	Limitations Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") > 50%	0.99	Fragments (<3") > 50%	0.99	Fragments >10" >3%	1.00
Snowtell-----	20	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fragments (<3") >25%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock depth < 20"	1.00
180: Shalgran-----	70	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Surface sand fractions > 90% by wt.	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Bedrock depth < 20"	1.00	Surface sand fractions > 90% by wt.	1.00	Surface sand fractions > 90% by wt.	1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
190: Hopeval-----	50	Limitations Saturation < 18" depth Flooding >= rare	1.00 1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 18" depth Occasional flooding Surface fragments (<3") 10-25%	1.00 0.50 0.06
Hopeval-----	35	Limitations Saturation < 18" depth Flooding >= rare Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Saturation < 12" depth Organic surface layer >= 4" thick	1.00 1.00	Limitations Saturation < 18" depth Organic surface layer >= 4" thick Occasional flooding	1.00 1.00 0.50
200: Cavebear-----	35	Limitations Flooding >= rare Saturation from 18 to 30" depth Fragments (<3") 25-50%	1.00 0.98 0.32	Limitations Saturation from 12 to 30" depth Fragments (<3") 25-50%	0.75 0.32	Limitations Surface fragments (<3") >25% Saturation from 18 to 30" depth Slopes 2 to 6%	1.00 0.98 0.74
Hopeval-----	25	Limitations Saturation < 18" depth Flooding >= rare	1.00 1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 18" depth Slopes 2 to 6% Occasional flooding	1.00 0.74 0.50
Hopeval-----	20	Limitations Saturation < 18" depth Flooding >= rare Organic surface layer >= 4" thick	1.00 1.00 1.00	Limitations Saturation < 12" depth Organic surface layer >= 4" thick	1.00 1.00	Limitations Saturation < 18" depth Organic surface layer >= 4" thick Slopes 2 to 6%	1.00 1.00 0.74
210: Waterpeak-----	80	Limitations Slopes > 15% Surface sand fractions > 90% by wt. Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Surface sand fractions > 90% by wt. Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface sand fractions > 90% by wt. Fragments >10" >3%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
211: Waterpeak-----	50	Limitations Slopes > 15% Surface sand fractions > 90% by wt. Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Surface sand fractions > 90% by wt. Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface sand fractions > 90% by wt. Fragments >10" >3%	1.00 1.00 1.00
Buggin-----	25	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
212: Waterpeak-----	45	Limitations Surface sand fractions > 90% by wt. Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Surface sand fractions > 90% by wt. Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Surface sand fractions > 90% by wt. Fragments >10" >3% Slopes > 6%	1.00 1.00 1.00
Sofgran-----	25	Limitations Fragments >10" >3% Slopes > 15%	1.00 1.00	Limitations Fragments >10" >3% Slopes > 15%	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
		Surface sand fractions 70 - 90% by wt.	0.74	Surface sand fractions 70 - 90% by wt.	0.74		
Temo-----	15	Limitations Bedrock depth < 20" Fragments >10" >3%	1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00		
220: Hardtil-----	45	Limitations Saturation < 18" depth Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Saturation < 12" depth Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Saturation < 18" depth Bedrock depth < 20"	1.00 1.00 1.00
Alpineco-----	25	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.32	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.32	Limitations Slopes > 6% Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
221: Hardtil-----	45	Limitations Slopes > 15% Saturation < 18" depth Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 15% Saturation < 12" depth Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 6% Saturation < 18" depth Bedrock depth < 20"	1.00 1.00 1.00
Alpineco-----	25	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.32	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.32	Limitations Slopes > 6% Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
222: Hardtil-----	40	Limitations Saturation < 18" depth Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Saturation < 12" depth Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Saturation < 18" depth Bedrock depth < 20"	1.00 1.00 1.00
Alpineco-----	25	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.32	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.32	Limitations Slopes > 6% Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00
Rock Outcrop-----	20	Not rated		Not rated		Not rated	

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
230: Hawkinspeak-----	45	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Thiefdrige-----	25	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
Angelwhine-----	15	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
231: Hawkinspeak-----	50	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Hawkinspeak-----	35	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
232: Hawkinspeak-----	45	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Hawkinspeak-----	25	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Hawkridge-----	15	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00
233: Angelwhine-----	30	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Hawkinspeak-----	30	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Hawkridge-----	25	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00
234: Hawkinspeak-----	40	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Hawkinspeak-----	25	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Thief ridge-----	20	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00
235: Hawkinspeak-----	35	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Hawkinspeak-----	30	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Angelwhine-----	20	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
240: Granylith-----	45	Limitations Saturation < 18" depth Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Saturation < 12" depth Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Saturation < 18" depth Surface fragments (<3") >25%	1.00 1.00 1.00
Hargran-----	25	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.08	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.08	Limitations Slopes > 6% Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
250: Florand-----	40	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 0.99 0.19	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 0.99 0.19	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >3" 5 to 30%	1.00 1.00 0.32
Lostridge-----	30	Limitations Slopes > 15% Fragments (<3") > 50%	1.00 1.00	Limitations Slopes > 15% Fragments (<3") > 50%	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >3" 5 to 30%	1.00 1.00 0.08
Fishsnooze-----	15	Limitations Slopes > 15% Fragments (<3") > 50%	1.00 0.99	Limitations Slopes > 15% Fragments (<3") > 50%	1.00 0.99	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock 20-40" and slope > 2%	1.00 1.00 0.50
260: Hawkridge-----	35	Limitations Fragments (<3") > 50% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Fragments (<3") > 50% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Hawkinspeak-----	30	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Hawkinspeak-----	20	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
261: Hawkridge-----	30	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
Lithnip-----	25	Limitations Slopes > 15% Fragments (<3") > 50% Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 15% Fragments (<3") > 50% Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Hawkinspeak-----	20	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
262: Domehill-----	50	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Surface fragments (<3") >25%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Bedrock depth < 20"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Kiote-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Very dusty	1.00	Very dusty	1.00	Very dusty	1.00
		Fragments (<3") 25-50%	0.41	Fragments (<3") 25-50%	0.41	Surface fragments (<3") >25%	1.00
270: Duco-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Smallcone-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Bedrock depth < 20"	1.00
Cagle-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments > 3" > 30%	1.00
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Fragments >10" >3%	1.00
271: Duco-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Vetagrande-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
						Fragments >3" 5 to 30%	0.08
Pinenut-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fragments (<3") >25%	1.00
280: Longcreek-----	50	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Bedrock depth < 20"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
Devada-----	35	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments > 3" > 30%	1.00
		Fragments >3" 25 to 75%	0.50	Fragments >3" 25 to 75%	0.50	Fragments >10" >3%	1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
290: Pernty-----	55	Limitations Bedrock depth < 20" Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Chen-----	30	Limitations Bedrock depth < 20" Fragments (<3") > 50% Dusty	1.00 1.00 0.50	Limitations Bedrock depth < 20" Fragments (<3") > 50% Dusty	1.00 1.00 0.50	Limitations Surface fragments (<3") >25% Bedrock depth < 20" Slopes > 6%	1.00 1.00 1.00
310: Bagval-----	40	Limitations Flooding >= rare Permeability is .06-.6"/hr	1.00 0.50	Limitations Permeability is .06-.6"/hr	0.50	Limitations Slopes 2 to 6% Permeability is .06-.6"/hr Surface fragments (<3") 10- 25%	0.50 0.50 0.22
Bagval-----	25	Limitations Flooding >= rare Permeability is .06-.6"/hr	1.00 0.50	Limitations Permeability is .06-.6"/hr	0.50	Limitations Slopes 2 to 6% Permeability is .06-.6"/hr Surface fragments (<3") 10- 25%	0.50 0.50 0.22
Wetbag-----	15	Limitations Saturation < 18" depth Flooding >= rare Permeability < .06"/hr	1.00 1.00 1.00	Limitations Saturation < 12" depth Permeability < .06"/hr	1.00 1.00	Limitations Saturation < 18" depth Permeability < .06"/hr Slopes 2 to 6%	1.00 1.00 0.50
Wetbag-----	10	Limitations Saturation < 18" depth Flooding >= rare Permeability < .06"/hr	1.00 1.00 1.00	Limitations Saturation < 12" depth Permeability < .06"/hr	1.00 1.00	Limitations Saturation < 18" depth Permeability < .06"/hr Slopes 2 to 6%	1.00 1.00 0.50
320: Franktown-----	75	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
330: Oest-----	85	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Fragments (<3") 25-50%	1.00 0.32 0.09	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Fragments (<3") 25-50%	1.00 0.32 0.09	Limitations Fragments > 3" > 30% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
340: Aspocket-----	55	Limitations Slopes > 15% Fragments >10" .1 to 3% Permeability is .06-.6"/hr	1.00 0.76 0.26	Limitations Slopes > 15% Fragments >10" .1 to 3% Permeability is .06-.6"/hr	1.00 0.76 0.26	Limitations Surface fragments (<3") >25% Slopes > 6% Fragments >10" .1 to 3%	1.00 1.00 0.76

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Aspocket-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Surface fragments (<3") >25%	1.00
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Slopes > 6%	1.00
		Permeability is .06-.6"/hr	0.26	Permeability is .06-.6"/hr	0.26	Fragments >10" .1 to 3%	0.76
350: Leroman-----	45	Limitations Fragments >10" >3%	1.00	Limitations Fragments >10" >3%	1.00	Limitations Slopes > 6%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.99	Fragments (<3") 25-50%	0.99	Fragments >10" >3%	1.00
Chenhigh-----	20	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Surface fragments (<3") >25%	1.00
Celeridge-----	10	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Fragments > 3" > 30%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Bedrock depth < 20"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments >10" >3%	1.00
Dogbed-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19
360: Monibasin-----	70	Limitations Fragments >10" .1 to 3%	0.76	Limitations Fragments >10" .1 to 3%	0.76	Limitations Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.19	Fragments (<3") 25-50%	0.19	Slopes > 6%	1.00
		Slopes 8 to 15%	0.09	Slopes 8 to 15%	0.09	Fragments >10" .1 to 3%	0.76
Vermdig-----	15	Limitations Saturation < 18" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 18" depth	1.00
		Permeability is .06-.6"/hr	0.26	Permeability is .06-.6"/hr	0.26	Slopes 2 to 6%	0.74
						Permeability is .06-.6"/hr	0.26
370: Celeridge-----	30	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments > 3" > 30%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock depth < 20"	1.00
Gerdog-----	25	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fragments (<3") >25%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock depth < 20"	1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Loope-----	20	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Pinew-----	10	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
380: Joecut-----	40	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.08	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.08	Limitations Slopes > 6% Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00
Celeridge-----	20	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Fragments > 3" > 30% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
Joecut-----	15	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
Gerdog-----	10	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Surface fragments (<3") >25% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
381: Heenlake-----	15	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Slopes > 6% Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00
Loope-----	10	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Joecut-----	30	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.99	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.99	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Joecut-----	30	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
382: Joecut-----	55	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.99	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.99	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Joecut-----	30	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
390: Heenlake-----	40	Limitations Slopes > 15% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 15% Fragments >10" >3% Dusty	1.00 1.00 0.50	Limitations Slopes > 6% Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00
Loope-----	30	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Chenhigh-----	15	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Surface fragments (<3") >25%	1.00 1.00 1.00
391: Heenlake-----	40	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Slopes > 6% Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00
Loope-----	25	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Dogbed-----	20	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" .1 to 3%	1.00 1.00 0.19
392: Heenlake-----	50	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Slopes > 6% Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Loope-----	35	Limitations Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00	Limitations Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25%	1.00 1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock depth < 20"	1.00
400: Pinew-----	35	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25%	1.00 1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Bedrock depth < 20"	1.00
Carshal-----	25	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25%	1.00 1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Bedrock depth < 20"	1.00
Loope-----	15	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25%	1.00 1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Bedrock depth < 20"	1.00
Celeridge-----	10	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Fragments > 3" > 30%	1.00 1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Bedrock depth < 20"	1.00
401: Pinew-----	75	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25%	1.00 1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Bedrock depth < 20"	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
410: Wolfcut-----	85	Limitations Flooding >= rare Fragments >10" >3%	1.00 1.00	Limitations Fragments >10" >3% Slopes > 15%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
		Slopes > 15%	1.00				
420: Buggin-----	75	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25%	1.00 1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Bedrock depth < 20"	1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
430: Newcone-----	75	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
440: Dogbed-----	35	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" .1 to 3%	1.00 1.00 0.19
Celeridge-----	25	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Fragments > 3" > 30% Bedrock depth < 20"	1.00 1.00 1.00
Carshal-----	20	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Joecut-----	10	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
450: Carshal-----	55	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Loope-----	20	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") 25-50%	1.00 1.00 0.95	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") 25-50%	1.00 1.00 0.95	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
460: Toejom-----	45	Limitations Slopes > 15% Surface sand fractions > 90% by wt. Bedrock depth < 20"	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Surface sand fractions > 90% by wt.	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Pimogran-----	30	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
461: Toejom-----	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Surface sand fractions > 90% by wt.	1.00	Bedrock depth < 20"	1.00	Surface fragments (<3") >25%	1.00
		Bedrock depth < 20"	1.00	Surface sand fractions > 90% by wt.	1.00	Bedrock depth < 20"	1.00
Pimogran-----	35	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Surface fragments (<3") >25%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Bedrock depth < 20"	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
462: Toejom-----	40	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Surface sand fractions > 90% by wt.	1.00	Bedrock depth < 20"	1.00	Surface fragments (<3") >25%	1.00
		Bedrock depth < 20"	1.00	Surface sand fractions > 90% by wt.	1.00	Bedrock depth < 20"	1.00
Glenbrook-----	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Surface sand fractions 70 - 90% by wt.	0.34	Surface sand fractions 70 - 90% by wt.	0.34	Surface fragments (<3") >25%	1.00
Pimogran-----	20	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Surface fragments (<3") >25%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Bedrock depth < 20"	1.00
470: Sumeadow-----	55	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Lostridge-----	30	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
						Fragments >3" 5 to 30%	0.08
471: Sumeadow-----	55	Limitations		Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Sumeadow-----	30	Limitations		Limitations		Limitations	
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Slopes 8 to 15%	0.09	Slopes 8 to 15%	0.09	Slopes > 6%	1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
480: Aspetill-----	60	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") 25-50%	1.00 1.00 0.82	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") 25-50%	1.00 1.00 0.82	Limitations Surface fragments (<3") >25% Fragments >10" >3% Slopes > 6%	1.00 1.00 1.00
Aspetill-----	25	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") 25-50%	1.00 1.00 0.82	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") 25-50%	1.00 1.00 0.82	Limitations Surface fragments (<3") >25% Fragments >10" >3% Slopes > 6%	1.00 1.00 1.00
481: Aspetill-----	50	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") 25-50%	1.00 1.00 0.82	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") 25-50%	1.00 1.00 0.82	Limitations Surface fragments (<3") >25% Fragments >10" >3% Slopes > 6%	1.00 1.00 1.00
Aspetill-----	35	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.50	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.50	Limitations Fragments >10" >3% Fragments > 3" > 30% Slopes > 6%	1.00 1.00 1.00
490: Cloudburst-----	50	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.82	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.82	Limitations Slopes > 6% Fragments > 3" > 30% Fragments >10" >3%	1.00 1.00 1.00
Murain-----	35	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.82	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.82	Limitations Slopes > 6% Fragments > 3" > 30% Fragments >10" >3%	1.00 1.00 1.00
491: Cloudburst-----	45	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.82	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.82	Limitations Slopes > 6% Fragments > 3" > 30% Fragments >10" >3%	1.00 1.00 1.00
Murain-----	25	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.82	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.82	Limitations Slopes > 6% Fragments > 3" > 30% Fragments >10" >3%	1.00 1.00 1.00
Hardtil-----	15	Limitations Saturation < 18" depth Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Saturation < 12" depth Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Saturation < 18" depth Bedrock depth < 20"	1.00 1.00 1.00
500: Chrisflat-----	90	Limitations Fragments >10" >3% Fragments (<3") > 50% Slopes 8 to 15%	1.00 1.00 0.09	Limitations Fragments >10" >3% Fragments (<3") > 50% Slopes 8 to 15%	1.00 1.00 0.09	Limitations Surface fragments (<3") >25% Fragments >10" >3% Slopes > 6%	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
510: Rubble Land-----	40	Not rated		Not rated		Not rated	
Lithnip-----	20	Limitations Fragments (<3") > 50% Bedrock depth < 20"	1.00 1.00	Limitations Fragments (<3") > 50% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
Fishsnooze-----	10	Limitations Slopes > 15% Fragments (<3") > 50%	1.00 0.99	Limitations Slopes > 15% Fragments (<3") > 50%	1.00 0.99	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock 20-40" and slope > 2%	1.00 1.00 0.50
511: Rock Outcrop-----	40	Not rated		Not rated		Not rated	
Snowtell-----	30	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Forsell-----	15	Limitations Fragments >10" >3% Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Fragments >10" >3% Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
512: Rock Outcrop-----	50	Not rated		Not rated		Not rated	
Snowtell-----	40	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
513: Rubble Land-----	40	Not rated		Not rated		Not rated	
Holdon-----	30	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
520: Canfire-----	40	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Crispy-----	35	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
530: Elaero-----	35	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.92	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.92	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Lockgate-----	25	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.97	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.97	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Granhogany-----	15	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") 25-50%	1.00 1.00 0.74	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") 25-50%	1.00 1.00 0.74	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Granidry-----	10	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
531: Elaero-----	55	Limitations Fragments >10" .1 to 3% Fragments (<3") 25-50% Slopes 8 to 15%	0.76 0.15 0.09	Limitations Fragments >10" .1 to 3% Fragments (<3") 25-50% Slopes 8 to 15%	0.76 0.15 0.09	Limitations Surface fragments (<3") >25% Slopes > 6% Fragments >10" .1 to 3%	1.00 1.00 0.76
Elaero-----	30	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.92	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.92	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
532: Elaero-----	55	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.92	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.92	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Granidry-----	20	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 0.99	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 0.99	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
540: Lostcannon, moist-----	45	Limitations Fragments >10" >3% Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Fragments >10" >3% Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Lostcannon-----	40	Limitations Fragments >10" >3% Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Fragments >10" >3% Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
560: Dunderberg-----	30	Limitations Very dusty Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Very dusty Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Very dusty	1.00 1.00 1.00
Dunderberg, warm-----	25	Limitations Very dusty Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Very dusty Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Very dusty	1.00 1.00 1.00
Conwayridge-----	20	Limitations Very dusty Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Very dusty Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Very dusty	1.00 1.00 1.00
Dunderberg, moist-----	10	Limitations Very dusty Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Very dusty Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Very dusty	1.00 1.00 1.00
561: Dunderberg-----	40	Limitations Very dusty Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Very dusty Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Very dusty	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Dunderberg, warm-----	30	Limitations Very dusty Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Very dusty Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Very dusty	1.00 1.00 1.00
Dunderberg, moist-----	15	Limitations Very dusty Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Very dusty Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Very dusty	1.00 1.00 1.00
570: Angelwhine-----	35	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Hawkinspeak-----	25	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.59	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Hawkridge-----	25	Limitations Fragments (<3") > 50% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Fragments (<3") > 50% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Surface fragments (<3") >25% Bedrock depth < 20" Slopes > 6%	1.00 1.00 1.00
580: Murain-----	50	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") > 50%	1.00 1.00 0.99	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") > 50%	1.00 1.00 0.99	Limitations Surface fragments (<3") >25% Fragments >10" >3% Slopes > 6%	1.00 1.00 1.00
Shorthike-----	20	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 0.99	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 0.99	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Murain, moist-----	15	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 0.99	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 0.99	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
581: Murain-----	45	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 0.99	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 0.99	Limitations Surface fragments (<3") >25% Slopes > 6% Fragments >10" >3%	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Murain-----	40	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.82	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.82	Limitations Slopes > 6% Fragments > 3" > 30% Fragments >10" >3%	1.00 1.00 1.00
590: Loope-----	40	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Heenlake-----	30	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Slopes > 6% Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00
Carshal-----	15	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
591: Loope-----	40	Limitations Bedrock depth < 20" Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Heenlake-----	30	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Fragments >10" >3% Slopes > 15% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Slopes > 6% Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00
Celeridge-----	15	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Fragments > 3" > 30% Bedrock depth < 20"	1.00 1.00 1.00
592: Loope-----	30	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Pinew-----	30	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Heenlake-----	25	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Slopes > 6% Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
600: Snowtell-----	45	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Sonorapass-----	25	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") > 50%	1.00 1.00 0.99	Limitations Fragments >10" >3% Slopes > 15% Fragments (<3") > 50%	1.00 1.00 0.99	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
610: Forsell-----	50	Limitations Fragments >10" >3% Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Fragments >10" >3% Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Snowtell-----	25	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
611: Forsell-----	50	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Snowtell-----	25	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
620: Indian Creek-----	90	Limitations Fragments (<3") > 50% Depth to pan <= 20" Permeability is .06-.6"/hr	1.00 0.99 0.50	Limitations Fragments (<3") > 50% Depth to pan <= 20" Permeability is .06-.6"/hr	1.00 0.99 0.50	Limitations Surface fragments (<3") >25% Slopes 2 to 6% Permeability is .06-.6"/hr	1.00 0.74 0.50
630: Olac-----	40	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Flex-----	25	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Duco-----	20	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
640: Koontz-----	55	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Nosrac-----	30	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" .1 to 3%	1.00 1.00 0.76
650: Shree-----	90	Limitations Flooding >= rare Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Fragments (<3") > 50% Fragments >10" .1 to 3% Dusty	1.00 0.76 0.50	Limitations Surface fragments (<3") >25% Slopes > 6% Fragments >10" .1 to 3%	1.00 1.00 0.76
651: Shree-----	50	Limitations Flooding >= rare Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 0.76	Limitations Surface fragments (<3") >25% Fragments >10" .1 to 3% Slopes 2 to 6%	1.00 0.76 0.74
Holbrook-----	35	Limitations Flooding >= rare Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Fragments >10" >3% Fragments (<3") > 50% Dusty	1.00 1.00 0.50	Limitations Surface fragments (<3") >25% Fragments >10" >3% Slopes 2 to 6%	1.00 1.00 0.74
660: Delhew-----	35	Limitations Slopes > 15% Fragments (<3") > 50% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.77	Limitations Slopes > 15% Fragments (<3") > 50% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.77	Limitations Slopes > 6% Surface fragments (<3") >25% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.77
Grandridge-----	30	Limitations Bedrock depth < 20" Slopes > 15% Fragments >10" >3%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% Fragments >10" >3%	1.00 1.00 1.00	Limitations Surface fragments (<3") >25% Bedrock depth < 20" Slopes > 6%	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Bakscratch-----	20	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
670: Springmeyer-----	85	Limitations Fragments (<3") 25-50%	0.26	Limitations Fragments (<3") 25-50%	0.26	Limitations Surface fragments (<3") >25% Slopes 2 to 6%	1.00 0.98
671: Springmeyer-----	50	Limitations Fragments (<3") 25-50%	0.26	Limitations Fragments (<3") 25-50%	0.26	Limitations Surface fragments (<3") >25% Slopes 2 to 6%	1.00 0.74
Cassiro-----	35	Limitations Permeability is .06-.6"/hr Fragments (<3") 25-50%	0.50 0.41	Limitations Permeability is .06-.6"/hr Fragments (<3") 25-50%	0.50 0.41	Limitations Surface fragments (<3") >25% Slopes 2 to 6% Permeability is .06-.6"/hr	1.00 0.74 0.50
680: Rolldown-----	40	Limitations Fragments (<3") > 50% Very dusty Slopes > 15%	1.00 1.00 1.00	Limitations Fragments (<3") > 50% Very dusty Slopes > 15%	1.00 1.00 1.00	Limitations Surface fragments (<3") >25% Very dusty Slopes > 6%	1.00 1.00 1.00
Mountpatterson-----	25	Limitations Bedrock depth < 20" Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Surface fragments (<3") >25% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
Rubble Land-----	20	Not rated		Not rated		Not rated	
700: Coldtree-----	75	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.80	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.80	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Rubble Land-----	10	Not rated		Not rated		Not rated	
710: Bakscratch-----	45	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Grandridge-----	25	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
McTom-----	15	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" >75%	1.00 1.00 1.00	Limitations Slopes > 15% Fragments >10" >3% Fragments >3" >75%	1.00 1.00 1.00	Limitations Slopes > 6% Fragments > 3" > 30% Fragments >10" >3%	1.00 1.00 1.00
720: Nohelp-----	55	Limitations Very dusty Slopes > 15% Permeability is .06-.6"/hr	1.00 1.00 0.46	Limitations Very dusty Slopes > 15% Permeability is .06-.6"/hr	1.00 1.00 0.46	Limitations Very dusty Slopes > 6% Surface fragments (<3") >25%	1.00 1.00 1.00
Joenchris-----	35	Limitations Fragments >10" >3% Slopes > 15% Very dusty	1.00 1.00 1.00	Limitations Fragments >10" >3% Slopes > 15% Very dusty	1.00 1.00 1.00	Limitations Fragments >10" >3% Slopes > 6% Surface fragments (<3") >25%	1.00 1.00 1.00
730: Burchflat-----	55	Limitations Fragments (<3") > 50% Slopes > 15% Fragments >10" >3%	1.00 1.00 1.00	Limitations Fragments (<3") > 50% Slopes > 15% Fragments >10" >3%	1.00 1.00 1.00	Limitations Surface fragments (<3") >25% Slopes > 6% Fragments >10" >3%	1.00 1.00 1.00
Loope-----	30	Limitations Bedrock depth < 20" Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Bedrock depth < 20" Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Surface fragments (<3") >25% Bedrock depth < 20" Slopes > 6%	1.00 1.00 1.00
731: Burchflat-----	45	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" >3%	1.00 1.00 1.00
Celeridge-----	20	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Fragments > 3" > 30% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
Loope-----	20	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
740: Jackflat-----	55	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.98	Limitations Slopes > 15% Fragments >10" >3% Fragments (<3") 25-50%	1.00 1.00 0.98	Limitations Surface fragments (<3") >25% Slopes > 6% Fragments >10" >3%	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Grandridge-----	30	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Surface fragments (<3") >25%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%	1.00
760: Thiefridge-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Thiefridge-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
770: Sweetmount-----	50	Limitations Fragments >10" >3%	1.00	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (<3") >25%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Fragments >10" >3%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Hawkinspeak-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.59	Fragments (<3") 25-50%	0.59	Fragments >10" >3%	1.00
Hawkridge-----	15	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >10" >3%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments > 3" > 30%	1.00
780: Granhogany-----	65	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.74	Fragments (<3") 25-50%	0.74	Bedrock depth < 20"	1.00
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
790: Dab-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19
Dab-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
791: Dab-----	45	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" .1 to 3%	1.00 1.00 0.19
Longday-----	25	Limitations Slopes > 15% Fragments (<3") > 50% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.01	Limitations Slopes > 15% Fragments (<3") > 50% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.01	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >3" 5 to 30%	1.00 1.00 0.20
Thiefbridge-----	15	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
792: Dab-----	35	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" .1 to 3%	1.00 1.00 0.19
Aspocket-----	25	Limitations Slopes > 15% Fragments >10" .1 to 3% Permeability is .06-.6"/hr	1.00 0.76 0.26	Limitations Slopes > 15% Fragments >10" .1 to 3% Permeability is .06-.6"/hr	1.00 0.76 0.26	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" .1 to 3%	1.00 1.00 0.76
Hawkridge-----	25	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Bedrock depth < 20" Fragments >10" >3%	1.00 1.00 1.00
800: Grandridge-----	60	Limitations Bedrock depth < 20" Slopes > 15% Fragments >10" >3%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% Fragments >10" >3%	1.00 1.00 1.00	Limitations Surface fragments (<3") >25% Bedrock depth < 20" Slopes > 6%	1.00 1.00 1.00
Delhew-----	30	Limitations Slopes > 15% Fragments (<3") > 50% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.77	Limitations Slopes > 15% Fragments (<3") > 50% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.77	Limitations Slopes > 6% Surface fragments (<3") >25% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.77
801: Grandridge-----	40	Limitations Bedrock depth < 20" Slopes > 15% Fragments >10" >3%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% Fragments >10" >3%	1.00 1.00 1.00	Limitations Surface fragments (<3") >25% Bedrock depth < 20" Slopes > 6%	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Delhew-----	25	Limitations Slopes > 15% Fragments (<3") > 50%	1.00 1.00	Limitations Slopes > 15% Fragments (<3") > 50%	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25%	1.00 1.00
		Surface sand fractions 70 - 90% by wt.	0.77	Surface sand fractions 70 - 90% by wt.	0.77	Surface sand fractions 70 - 90% by wt.	0.77
Bullville-----	20	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25%	1.00 1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Fragments >10" >3%	1.00
810: Corbett-----	55	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Fragments >10" >3%	1.00 1.00
		Surface sand fractions 70 - 90% by wt.	0.41	Surface sand fractions 70 - 90% by wt.	0.41	Fragments > 3" > 30%	1.00
Toiyabe-----	20	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Fragments > 3" > 30%	1.00 1.00
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Bedrock depth < 20"	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
820: Freelpeak-----	50	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25%	1.00 1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Fragments >10" >3%	1.00
Windyridge-----	25	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20"	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25%	1.00 1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Bedrock depth < 20"	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
830: Windyridge-----	45	Limitations Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00	Limitations Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25%	1.00 1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock depth < 20"	1.00
Freelpeak-----	25	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 15% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25%	1.00 1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Fragments >10" >3%	1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
840: Lavaspring-----	55	Limitations Saturation < 18" depth Flooding >= rare Very dusty	1.00 1.00 1.00	Limitations Saturation < 12" depth Very dusty	1.00 1.00	Limitations Saturation < 18" depth Very dusty Occasional flooding	1.00 1.00 0.50
Trespass-----	25	Limitations Flooding >= rare Very dusty Fragments (<3") 25-50%	1.00 1.00 0.27	Limitations Very dusty Fragments (<3") 25-50%	1.00 0.27	Limitations Very dusty Surface fragments (<3") >25% Fragments >3" 5 to 30%	1.00 1.00 0.05
Lavaspring-----	10	Limitations Saturation < 18" depth Flooding >= rare Very dusty	1.00 1.00 1.00	Limitations Saturation < 12" depth Very dusty	1.00 1.00	Limitations Saturation < 18" depth Very dusty Occasional flooding	1.00 1.00 0.50
850: Lunder-----	90	Limitations Depth to pan <= 20" Fragments (<3") > 50% Permeability is .06-.6"/hr	1.00 1.00 0.46	Limitations Depth to pan <= 20" Fragments (<3") > 50% Permeability is .06-.6"/hr	1.00 1.00 0.46	Limitations Surface fragments (<3") >25% Slopes 2 to 6% Permeability is .06-.6"/hr	1.00 0.74 0.46
851: Lunder-----	50	Limitations Depth to pan <= 20" Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Depth to pan <= 20" Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Surface fragments (<3") >25% Slopes > 6% Permeability is .06-.6"/hr	1.00 1.00 0.46
Leviathan-----	35	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 15% Fragments (<3") > 50% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Slopes > 6% Surface fragments (<3") >25% Fragments >10" .1 to 3%	1.00 1.00 0.76
860: Hardnut-----	55	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Ocashe-----	30	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 20" Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
870: Epvip-----	40	Limitations Bedrock depth < 20" Very dusty Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Very dusty Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Domehill-----	30	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Surface fragments (<3") >25%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Bedrock depth < 20"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Ashflat-----	15	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Very dusty	1.00
		Fragments (<3") 25-50%	0.36	Fragments (<3") 25-50%	0.36	Surface fragments (<3") >25%	1.00
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Slopes > 6%	1.00
871: Halfash-----	50	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Slopes > 6%	1.00
		Very dusty	1.00	Very dusty	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Bedrock depth < 20"	1.00
Domehill-----	35	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Surface fragments (<3") >25%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Bedrock depth < 20"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
872: Epvip-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Surface fragments (<3") >25%	1.00
		Very dusty	1.00	Very dusty	1.00	Bedrock depth < 20"	1.00
Vetash-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Very dusty	1.00	Very dusty	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Very dusty	1.00
Epvip-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Surface fragments (<3") >25%	1.00
		Very dusty	1.00	Very dusty	1.00	Bedrock depth < 20"	1.00
873: Epvip-----	35	Limitations Bedrock depth < 20"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Surface fragments (<3") >25%	1.00
		Very dusty	1.00	Very dusty	1.00	Bedrock depth < 20"	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Very dusty	1.00
Hardnut-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Surface fragments (<3") >25%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Bedrock depth < 20"	1.00

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
Vetash-----	15	Limitations Slopes > 15% Very dusty Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 15% Very dusty Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Very dusty	1.00 1.00 1.00
880: Mopana-----	90	Limitations Depth to pan <= 20" Very dusty Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Depth to pan <= 20" Very dusty Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Surface fragments (<3") >25% Very dusty Fragments >10" >3%	1.00 1.00 1.00
890: Masonic-----	40	Limitations Very dusty Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Very dusty Fragments (<3") > 50% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Very dusty	1.00 1.00 1.00
Epvip-----	30	Limitations Bedrock depth < 20" Very dusty Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Very dusty Fragments (<3") > 50%	1.00 1.00 1.00	Limitations Slopes > 6% Surface fragments (<3") >25% Bedrock depth < 20"	1.00 1.00 1.00
Domehill-----	15	Limitations Bedrock depth < 20" Fragments (<3") > 50% Very dusty	1.00 1.00 1.00	Limitations Bedrock depth < 20" Fragments (<3") > 50% Very dusty	1.00 1.00 1.00	Limitations Surface fragments (<3") >25% Bedrock depth < 20" Slopes > 6%	1.00 1.00 1.00
900: Brokenhoe-----	60	Limitations Very dusty Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Very dusty Fragments >10" >3% Slopes > 15%	1.00 1.00 1.00	Limitations Very dusty Fragments >10" >3% Fragments > 3" > 30%	1.00 1.00 1.00
Fisherdig-----	25	Limitations Depth to pan <= 20" Very dusty Fragments (<3") 25-50%	1.00 1.00 0.76	Limitations Depth to pan <= 20" Very dusty Fragments (<3") 25-50%	1.00 1.00 0.76	Limitations Surface fragments (<3") >25% Very dusty Fragments >3" 5 to 30%	1.00 1.00 0.92
910: Indian Creek-----	60	Limitations Fragments (<3") > 50% Depth to pan <= 20" Permeability is .06-.6"/hr	1.00 0.99 0.50	Limitations Fragments (<3") > 50% Depth to pan <= 20" Permeability is .06-.6"/hr	1.00 0.99 0.50	Limitations Surface fragments (<3") >25% Slopes 2 to 6% Permeability is .06-.6"/hr	1.00 0.74 0.50
Haybourne-----	25	Limitations Flooding >= rare Fragments (<3") 25-50%	1.00 0.50	Limitations Fragments (<3") 25-50%	0.50	Limitations Surface fragments (<3") >25% Slopes 2 to 6%	1.00 0.02

TABLE 13.--Urban and Recreation (Part 1)--Continued

Map symbol and soil name	Pct.	Camp Areas		Picnic Areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
920: Aquic Torrifluvents-----	35	Limitations Flooding >= rare Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.82	Limitations Fragments >10" >3% Fragments >3" 25 to 75%	1.00 0.82	Limitations Fragments >10" >3% Fragments > 3" > 30% Surface fragments (<3") >25%	1.00 1.00 0.99
Conway-----	25	Limitations Flooding >= rare Saturation from 18 to 30" depth	1.00 0.07	Limitations Saturation from 12 to 30" depth	0.03	Limitations Occasional flooding Saturation from 18 to 30" depth Surface fragments (<3") 10- 25%	0.50 0.07 0.06
Torrifluventic Haploxerolls-----	25	Limitations Flooding >= rare Fragments >10" >3% Fragments >3" 25 to 75%	 1.00 1.00 0.92	Limitations Fragments >10" >3% Fragments >3" 25 to 75%	 1.00 0.92	Limitations Fragments >10" >3% Fragments > 3" > 30% Surface fragments (<3") >25%	 1.00 1.00 0.99
930: Lavaspring-----	60	Limitations Flooding >= rare Very dusty	1.00 1.00	Limitations Very dusty	1.00	Limitations Very dusty Occasional flooding Surface fragments (<3") 10- 25%	1.00 0.50 0.06
Lavaspring-----	25	Limitations Saturation < 18" depth Flooding >= rare Very dusty	1.00 1.00 1.00	Limitations Saturation < 12" depth Very dusty	1.00 1.00	Limitations Saturation < 18" depth Very dusty Occasional flooding	1.00 1.00 0.50
960: Rose Creek-----	85	Limitations Flooding >= rare Saturation from 18 to 30" depth	1.00 0.07	Limitations Frequent flooding Saturation from 12 to 30" depth	0.50 0.03	Limitations Flooding > Occasional Saturation from 18 to 30" depth	1.00 0.07
998: Dumps-----	60	Not rated		Not rated		Not rated	
Pits-----	30	Not rated		Not rated		Not rated	
999: Water-----	100	Not rated		Not rated		Not rated	

The interpretation for camp areas evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, depth to bedrock, depth to cemented pans, fragments less than or equal to or greater than 3 inches in size, sodium content (SAR), salinity (EC), clayey surface textures, Unified classes for high organic matter (PT, OL, OH), soil dustiness and permeability (Ksat) that is too high allowing seepage in some climates.

The interpretation for picnic areas evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, depth to bedrock, depth to cemented pan, salinity (EC), pH, soil dustiness, fragments greater than 3 inches in size, fragments greater than 10 inches on the surface, the amount of sand or clay in the surface, Unified classes for high organic matter (PT, OL, OH) and permeability (Ksat) that is too high allowing seepage in some climates.

The interpretation for playgrounds evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, depth to bedrock, depth to cemented pan, fragments greater than 10 inches in size on the surface, fragments equal to or less than 3 inches in size, Unified class for high organic matter (PT, OL, OH), soil dustiness, sand or clay surface content, soil pH, salinity (EC), and permeability that is too high allowing seepage in some climates.

TABLE 14.--Urban and Recreation (Part 2)

Pacific Southwest MLRA Office Interpretations

The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only three highest value limitations are listed. There may be more limitations. Fine earth fractions and coarse fragments are reported on a weight basis. A brief rating criteria summary and abbreviations are listed on the last page of this report.

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
100: Lithnip-----	40	Limitations Slopes > 25% Surface fragments <3" >65% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Slopes > 40% Surface fragments <3" >65% Surface fragments (>10") .1-3% coverage	1.00 1.00 0.19	Limitations Bedrock depth < 20" Slopes > 15% Fragments (gravel-size) >50%	1.00 1.00 1.00
Hawkinspeak-----	30	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes > 40%	1.00 1.00	Limitations Slopes > 15% Fragments (gravel size) 25- 50% AWC 2-4" to 40"	1.00 0.59 0.29
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
101: Lithnip, moist-----	40	Limitations Slopes > 25% Surface fragments <3" >65% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Slopes > 40% Surface fragments <3" >65% Surface fragments (>10") .1-3% coverage	1.00 1.00 0.19	Limitations Bedrock depth < 20" Slopes > 15% Fragments (gravel-size) >50%	1.00 1.00 1.00
Rock Outcrop-----	25	Not rated		Not rated		Not rated	
Fishsnooze-----	20	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% Fragments (gravel-size) >50% AWC 2-4" to 40"	1.00 1.00 0.69
102: Lithnip-----	40	Limitations Surface fragments <3" >65% Slopes 15 - 25% Fragments >10" .1 to 3%	1.00 0.32 0.19	Limitations Surface fragments <3" >65% Surface fragments (>10") .1-3% coverage	1.00 0.19	Limitations Bedrock depth < 20" Fragments (gravel-size) >50% AWC < 2" to 40"	1.00 1.00 1.00
Rock Outcrop-----	25	Not rated		Not rated		Not rated	
Fishsnooze-----	20	Limitations Slopes 15 - 25%	0.32	No limitations		Limitations Fragments (gravel-size) >50% Slopes > 15% AWC 2-4" to 40"	1.00 1.00 0.69

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
103: Lithnip-----	40	Limitations Slopes > 25% Surface fragments <3" >65% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Slopes > 40% Surface fragments <3" >65% Surface fragments (>10") .1-3% coverage	1.00 1.00 0.19	Limitations Bedrock depth < 20" Slopes > 15% Fragments (gravel-size) >50%	1.00 1.00 1.00
Meiss-----	30	Limitations Slopes > 25% Very dusty	1.00 1.00	Limitations Very dusty Slopes 25 to 40%	1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Hawkinspeak-----	15	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes > 40%	1.00 1.00	Limitations Slopes > 15% Fragments (gravel size) 25- 50% AWC 2-4" to 40"	1.00 0.59 0.29
110: Jobsis-----	45	Limitations Fragments >10" >3% Surface sand fractions 70 - 90% by wt. Slopes 15 - 25%	1.00 0.70 0.32	Limitations Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt.	1.00 0.70	Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
Whittell-----	25	Limitations Slopes 15 - 25%	0.32	No limitations		Limitations AWC < 2" to 40" Slopes > 15% Bedrock depth 20 to 40"	1.00 1.00 0.26
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
111: Whittell-----	45	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.26
Jobsis-----	25	Limitations Slopes > 25% Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.70	Limitations Surface fragments (>10") >3% coverage Slopes > 40% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.70	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
112: Jobsis-----	45	Limitations Fragments >10" >3% Surface sand fractions 70 - 90% by wt. Slopes 15 - 25%	1.00 0.70 0.32	Limitations Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt.	1.00 0.70	Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
Whittell-----	25	Limitations Slopes 15 - 25%	0.32	No limitations		Limitations AWC < 2" to 40" Slopes > 15% Bedrock depth 20 to 40"	1.00 1.00 0.26
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
113: Whittell-----	45	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth 20 to 40"	1.00 1.00 0.26
Jobsis-----	25	Limitations Slopes > 25% Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	 1.00 1.00 0.70	Limitations Surface fragments (>10") >3% coverage Slopes > 40% Surface sand fractions 70 - 90% by wt.	 1.00 1.00 0.70	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	 1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
120: Toiyabe-----	45	Limitations Slopes > 25% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.42	Limitations Surface fragments (>10") >3% coverage Slopes > 40% Surface fragments (>3") 25- 75%	1.00 1.00 0.42	Limitations Bedrock depth < 20" Slopes > 15% Fragments > 3" > 30%	1.00 1.00 1.00
Corbett-----	25	Limitations Slopes > 25% Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.41	Limitations Surface fragments (>10") >3% coverage Slopes > 40% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.41	Limitations Slopes > 15% AWC < 2" to 40" Fragments > 3" > 30%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
121: Toiyabe-----	45	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Surface sand fractions 70 - 90% by wt.	1.00 0.42 0.41	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75% Surface sand fractions 70 - 90% by wt.	1.00 0.42 0.41	Limitations Bedrock depth < 20" Fragments > 3" > 30% AWC < 2" to 40"	1.00 1.00 1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Corbett-----	35	Limitations Fragments >10" >3% Surface sand fractions 70 - 90% by wt. Fragments >3" 25 to 75%	1.00 0.41 0.35	Limitations Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt. Surface fragments (>3") 25- 75%	1.00 0.41 0.35	Limitations AWC < 2" to 40" Fragments > 3" > 30% Slopes > 15%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
122: Toiyabe-----	50	Limitations Slopes > 25% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.42	Limitations Slopes > 40% Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 1.00 0.42	Limitations Bedrock depth < 20" Slopes > 15% Fragments > 3" > 30%	1.00 1.00 1.00
Corbett-----	20	Limitations Slopes > 25% Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.41	Limitations Slopes > 40% Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.41	Limitations Slopes > 15% AWC < 2" to 40" Fragments > 3" > 30%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
130: Sofgran-----	40	Limitations Fragments >10" >3% Slopes > 25% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.74	Limitations Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt. Slopes 25 to 40%	1.00 0.74 0.50	Limitations Slopes > 15% AWC < 2" to 40" Loamy coarse sand surface	1.00 1.00 0.50
Klauspeak-----	30	Limitations Fragments >10" >3% Slopes > 25% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.84	Limitations Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt. Slopes 25 to 40%	1.00 0.84 0.50	Limitations Slopes > 15% AWC 2-4" to 40" Fragments (gravel size) 25- 50%	1.00 0.92 0.13
Temo-----	15	Limitations Fragments >10" >3% Slopes > 25% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.82	Limitations Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt. Slopes 25 to 40%	1.00 0.82 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
131: Sofgran-----	40	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Slopes > 25%	1.00	Surface sand fractions 70 - 90% by wt.	0.74	AWC < 2" to 40"	1.00
		Surface sand fractions 70 - 90% by wt.	0.74	Slopes 25 to 40%	0.50	Loamy coarse sand surface	0.50
Temo-----	25	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Slopes > 25%	1.00	Surface sand fractions 70 - 90% by wt.	0.82	Slopes > 15%	1.00
		Surface sand fractions 70 - 90% by wt.	0.82	Slopes 25 to 40%	0.50	AWC < 2" to 40"	1.00
Shalgran-----	20	Limitations Surface sand fractions > 90% by wt.	1.00	Limitations Surface sand fractions > 90% by wt.	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15%	1.00
		Slopes > 25%	1.00	Slopes 25 to 40%	0.50	Coarse sand or sand surface	1.00
132: Sofgran-----	50	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Slopes > 25%	1.00	Surface sand fractions 70 - 90% by wt.	0.74	AWC < 2" to 40"	1.00
		Surface sand fractions 70 - 90% by wt.	0.74	Slopes 25 to 40%	0.50	Loamy coarse sand surface	0.50
Temo-----	25	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Slopes > 25%	1.00	Surface sand fractions 70 - 90% by wt.	0.82	Slopes > 15%	1.00
		Surface sand fractions 70 - 90% by wt.	0.82	Slopes 25 to 40%	0.50	AWC < 2" to 40"	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
140: Temo-----	40	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15%	1.00
		Surface sand fractions 70 - 90% by wt.	0.82	Surface sand fractions 70 - 90% by wt.	0.82	AWC < 2" to 40"	1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Dagget-----	30	Limitations Slopes > 25%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Slopes > 40%	1.00	AWC < 2" to 40"	1.00
		Surface sand fractions 70 - 90% by wt.	0.41	Surface sand fractions 70 - 90% by wt.	0.41	Fragments (gravel size) 25- 50%	0.74
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
150: Mottskel-----	85	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Fragments > 3" > 30%	1.00
		Surface sand fractions 70 - 90% by wt.	0.82	Surface sand fractions 70 - 90% by wt.	0.82	AWC 2-4" to 40"	0.92
		Fragments >3" 25 to 75%	0.18	Surface fragments (>3") 25- 75%	0.18	Loamy coarse sand surface	0.50
160: Hopeval-----	50	Limitations Saturation < 12" depth Organic surface layer >= 4" thick	1.00 1.00	Limitations Saturation < 12" depth Organic surface layer >= 4" thick	1.00 1.00	Limitations Saturation < 12" depth Organic surface layer >= 4" thick Occasional flooding	1.00 1.00 0.80
Hopeval-----	35	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth Occasional flooding	1.00 0.80
162: Corralval-----	45	No limitations		No limitations		Limitations Fragments (gravel-size) >50% AWC 2-4" to 40"	1.00 0.01
Hopeval-----	45	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth Occasional flooding	1.00 0.80
170: Burnlake-----	60	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Fragments (gravel-size) >50%	1.00
		Slopes 15 - 25%	0.32			Slopes > 15%	1.00
						AWC 2-4" to 40"	0.97
Roadcat-----	25	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations AWC < 2" to 40"	1.00
		Surface sand fractions 70 - 90% by wt.	0.74	Surface sand fractions 70 - 90% by wt.	0.74	Fragments (gravel-size) >50%	1.00
		Slopes 15 - 25%	0.02			Slopes > 15%	1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
171: Stumpatil-----	65	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.32	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15% Fragments (gravel size) 25- 50% AWC 2-4" to 40"	1.00 0.96 0.48
Morscour-----	20	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.32	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments (gravel-size) >50%	1.00 1.00 1.00
172: Stumpatil-----	85	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes > 40%	1.00 1.00	Limitations Slopes > 15% Fragments (gravel size) 25- 50% AWC 2-4" to 40"	1.00 0.96 0.48
173: Stumpatil-----	85	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.32	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15% Fragments (gravel size) 25- 50% AWC 2-4" to 40"	1.00 0.96 0.48
174: Stumpatil-----	35	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.32	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15% Fragments (gravel size) 25- 50% AWC 2-4" to 40"	1.00 0.96 0.48
Sonorapass-----	30	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.32	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations AWC < 2" to 40" Slopes > 15% Bedrock depth < 20"	1.00 1.00 0.99
Snowtell-----	20	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.32	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
180: Shalgran-----	70	Limitations Slopes > 25%	1.00	Limitations Surface sand fractions > 90% by wt.	1.00	Limitations Bedrock depth < 20"	1.00
		Surface sand fractions > 90% by wt.	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Slopes > 40%	1.00	Coarse sand or sand surface	1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
190: Hopeval-----	50	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth Occasional flooding	1.00 0.80
Hopeval-----	35	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00
						Occasional flooding	0.80
200: Cavebear-----	35	Limitations Saturation from 12 to 24" depth	0.44	Limitations Saturation from 12 to 24" depth	0.44	Limitations Saturation from 12 to 24" depth Fragments (gravel size) 25-50% AWC 2-4" to 40"	0.44 0.32 0.15
Hopeval-----	25	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth Occasional flooding	1.00 0.80
Hopeval-----	20	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00
						Occasional flooding	0.80
210: Waterpeak-----	80	Limitations Slopes > 25%	1.00	Limitations Surface sand fractions > 90% by wt.	1.00	Limitations Slopes > 15%	1.00
		Surface sand fractions > 90% by wt.	1.00	Surface fragments (>10") >3% coverage	1.00	Coarse sand or sand surface	1.00
		Fragments >10" >3%	1.00	Slopes > 40%	1.00	Fragments > 3" > 30%	0.99
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
211: Waterpeak-----	50	Limitations Surface sand fractions > 90% by wt.	1.00	Limitations Surface sand fractions > 90% by wt.	1.00	Limitations Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Coarse sand or sand surface	1.00
		Slopes > 25%	1.00	Slopes 25 to 40%	0.50	Fragments > 3" > 30%	0.99

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Buggin-----	25	Limitations Fragments >10" >3% Surface sand fractions 70 - 90% by wt. Fragments >3" 25 to 75%	1.00 0.74 0.35	Limitations Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt. Surface fragments (>3") 25- 75%	1.00 0.74 0.35	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments > 3" > 30%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
212: Waterpeak-----	45	Limitations Surface sand fractions > 90% by wt. Fragments >10" >3% Slopes 15 - 25%	1.00 1.00 0.08	Limitations Surface sand fractions > 90% by wt. Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 1.00 0.02	Limitations Coarse sand or sand surface Slopes > 15% Fragments > 3" > 30%	1.00 1.00 0.99
Sofgran-----	25	Limitations Fragments >10" >3% Surface sand fractions 70 - 90% by wt. Slopes 15 - 25%	1.00 0.74 0.32	Limitations Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt.	1.00 0.74	Limitations AWC < 2" to 40" Slopes > 15% Loamy coarse sand surface	1.00 1.00 0.50
Temo-----	15	Limitations Fragments >10" >3% Surface sand fractions 70 - 90% by wt. Slopes 15 - 25%	1.00 0.82 0.32	Limitations Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt.	1.00 0.82	Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
220: Hardtil-----	45	Limitations Saturation < 12" depth Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.82	Limitations Saturation < 12" depth Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.82	Limitations Bedrock depth < 20" Saturation < 12" depth AWC < 2" to 40"	1.00 1.00 1.00
Alpineco-----	25	Limitations Fragments >10" >3% Slopes 15 - 25% Fragments >3" 25 to 75%	1.00 0.32 0.32	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.32	Limitations Fragments > 3" > 30% Slopes > 15%	1.00 1.00
Rock Outcrop-----	20	Not rated		Not rated		Not rated	

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
221: Hardtil-----	45	Limitations Slopes > 25% Saturation < 12" depth Fragments >10" >3%	1.00 1.00 1.00	Limitations Saturation < 12" depth Surface fragments (>10") >3% coverage Slopes > 40%	1.00 1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% Saturation < 12" depth	1.00 1.00 1.00
Alpineco-----	25	Limitations Slopes > 25% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.32	Limitations Surface fragments (>10") >3% coverage Slopes > 40% Surface fragments (>3") 25-75%	1.00 1.00 0.32	Limitations Slopes > 15% Fragments > 3" > 30%	1.00 1.00
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
222: Hardtil-----	40	Limitations Saturation < 12" depth Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.82	Limitations Saturation < 12" depth Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.82	Limitations Bedrock depth < 20" Saturation < 12" depth AWC < 2" to 40"	1.00 1.00 1.00
Alpineco-----	25	Limitations Fragments >10" >3% Slopes 15 - 25% Fragments >3" 25 to 75%	1.00 0.32 0.32	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25-75%	1.00 0.32	Limitations Fragments > 3" > 30% Slopes > 15%	1.00 1.00
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
230: Hawkinspeak-----	45	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25-50% AWC 2-4" to 40"	1.00 0.59 0.29
Thieftridge-----	25	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Slopes 15 - 25%	1.00 0.92 0.32	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25-75%	1.00 0.92	Limitations Bedrock depth < 20" Fragments > 3" > 30% AWC < 2" to 40"	1.00 1.00 1.00
Angelwhine-----	15	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15% Fragments (gravel-size) >50% Fragments >3" 5 to 30%	1.00 1.00 0.32

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
231: Hawkinspeak-----	50	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Slopes > 25%	1.00	Slopes 25 to 40%	0.50	Fragments (gravel size) 25- 50%	0.59
						AWC 2-4" to 40"	0.29
Hawkinspeak-----	35	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Slopes > 25%	1.00	Slopes 25 to 40%	0.50	Fragments (gravel size) 25- 50%	0.59
						AWC 2-4" to 40"	0.29
232: Hawkinspeak-----	45	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Slopes 15 - 25%	0.32			Fragments (gravel size) 25- 50%	0.59
						AWC 2-4" to 40"	0.29
Hawkinspeak-----	25	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Slopes 15 - 25%	0.32			Fragments (gravel size) 25- 50%	0.59
						AWC 2-4" to 40"	0.29
Hawkridge-----	15	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >3" 25 to 75%	0.32	Surface fragments (>3") 25- 75%	0.32	AWC < 2" to 40"	1.00
		Slopes 15 - 25%	0.08			Fragments > 3" > 30%	1.00
233: Angelwhine-----	30	Limitations Slopes > 25%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Slopes 25 to 40%	0.50	Fragments (gravel-size) >50%	1.00
						Fragments >3" 5 to 30%	0.32
Hawkinspeak-----	30	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Slopes > 25%	1.00	Slopes 25 to 40%	0.50	Fragments (gravel size) 25- 50%	0.59
						AWC 2-4" to 40"	0.29

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Hawkridge-----	25	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >3" 25 to 75%	0.32	Surface fragments (>3") 25- 75%	0.32	AWC < 2" to 40"	1.00
		Slopes 15 - 25%	0.08			Fragments > 3" > 30%	1.00
234: Hawkinspeak-----	40	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Slopes > 25%	1.00	Slopes 25 to 40%	0.50	Fragments (gravel size) 25- 50%	0.59
						AWC 2-4" to 40"	0.29
Hawkinspeak-----	25	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Fragments (gravel size) 25- 50%	0.59
						AWC 2-4" to 40"	0.29
Thiefridge-----	20	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >3" 25 to 75%	0.92	Surface fragments (>3") 25- 75%	0.92	Fragments > 3" > 30%	1.00
		Slopes 15 - 25%	0.08			AWC < 2" to 40"	1.00
235: Hawkinspeak-----	35	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Fragments (gravel size) 25- 50%	0.59
						AWC 2-4" to 40"	0.29
Hawkinspeak-----	30	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Fragments (gravel size) 25- 50%	0.59
						AWC 2-4" to 40"	0.29
Angelwhine-----	20	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Fragments (gravel-size) >50%	1.00
						Fragments >3" 5 to 30%	0.32
240: Granylith-----	45	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Saturation < 12" depth	1.00
		Surface sand fractions 70 - 90% by wt.	0.74	Surface sand fractions 70 - 90% by wt.	0.74	AWC < 2" to 40"	1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Hargran-----	25	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Fragments > 3" > 30%	1.00
		Slopes 15 - 25%	0.32	Surface fragments (>3") 25- 75%	0.08	Slopes > 15%	1.00
		Fragments >3" 25 to 75%	0.08			Bedrock depth 20 to 40"	0.01
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
250: Florand-----	40	Limitations Slopes > 25%	1.00	Limitations Slopes 25 to 40%	0.50	Limitations Slopes > 15%	1.00
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10") .1-3% coverage	0.19	Fragments (gravel size) 25- 50%	0.99
						Fragments >3" 5 to 30%	0.32
Lostridge-----	30	Limitations Slopes > 25%	1.00	Limitations Slopes 25 to 40%	0.50	Limitations Slopes > 15%	1.00
						Fragments (gravel-size) >50%	1.00
						Bedrock depth 20 to 40"	0.54
Fishsnooze-----	15	Limitations Slopes > 25%	1.00	Limitations Slopes 25 to 40%	0.50	Limitations Slopes > 15%	1.00
						Fragments (gravel size) 25- 50%	0.99
						AWC 2-4" to 40"	0.69
260: Hawkridge-----	35	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	Fragments (gravel-size) >50%	1.00
		Slopes 15 - 25%	0.32			AWC < 2" to 40"	1.00
Hawkinspeak-----	30	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Slopes > 25%	1.00	Slopes 25 to 40%	0.50	Fragments (gravel size) 25- 50%	0.59
						AWC 2-4" to 40"	0.29
Hawkinspeak-----	20	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Slopes > 25%	1.00	Slopes 25 to 40%	0.50	Fragments (gravel size) 25- 50%	0.59
						AWC 2-4" to 40"	0.29

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
261: Hawkridge-----	30	Limitations Fragments >10" >3% Slopes 15 - 25% Fragments >3" 25 to 75%	1.00 0.32 0.32	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.32	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments > 3" > 30%	1.00 1.00 1.00
Lithnip-----	25	Limitations Slopes > 25% Surface fragments <3" >65% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Slopes > 40% Surface fragments <3" >65% Surface fragments (>10") .1-3% coverage	1.00 1.00 0.19	Limitations Bedrock depth < 20" Slopes > 15% Fragments (gravel-size) >50%	1.00 1.00 1.00
Hawkinspeak-----	20	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25- 50% AWC 2-4" to 40"	1.00 0.59 0.29
262: Domehill-----	50	Limitations Very dusty Fragments >10" .1 to 3% Slopes 15 - 25%	1.00 0.76 0.08	Limitations Very dusty Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Bedrock depth < 20" Fragments (gravel-size) >50% Slopes > 15%	1.00 1.00 1.00
Kiote-----	35	Limitations Very dusty Slopes > 25%	1.00 1.00	Limitations Very dusty Slopes 25 to 40%	1.00 0.56	Limitations Slopes > 15% Fragments (gravel size) 25- 50%	1.00 0.41
270: Duco-----	40	Limitations Fragments >10" >3% Slopes > 25% Fragments >3" 25 to 75%	1.00 1.00 0.08	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40% Surface fragments (>3") 25- 75%	1.00 0.22 0.08	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Smallcone-----	30	Limitations Slopes > 25%	1.00	Limitations Slopes 25 to 40%	0.56	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Cagle-----	15	Limitations Fragments >10" >3% Slopes 15 - 25% Fragments >3" 25 to 75%	1.00 0.50 0.32	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.32	Limitations Slopes > 15% Fragments > 3" > 30% Bedrock depth 20 to 40"	1.00 1.00 0.65

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
271: Duco-----	40	Limitations Fragments >10" >3% Slopes > 25% Fragments >3" 25 to 75%	1.00 1.00 0.08	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40% Surface fragments (>3") 25- 75%	1.00 0.56 0.08	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Vetagrande-----	25	Limitations Slopes > 25%	1.00	Limitations Slopes 25 to 40%	0.56	Limitations Slopes > 15% Fragments (gravel-size) >50% AWC 2-4" to 40"	1.00 1.00 0.59
Pinenut-----	20	Limitations Fragments >10" >3% Slopes > 25% Fragments >3" 25 to 75%	1.00 1.00 0.02	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40% Surface fragments (>3") 25- 75%	1.00 0.56 0.02	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
280: Longcreek-----	50	Limitations Fragments >10" >3% Dusty Fragments >3" 25 to 75%	1.00 0.50 0.26	Limitations Surface fragments (>10") >3% coverage Dusty Surface fragments (>3") 25- 75%	1.00 0.50 0.26	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments > 3" > 30%	1.00 1.00 1.00
Devada-----	35	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Dusty	1.00 0.50 0.50	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75% Dusty	1.00 0.50 0.50	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments > 3" > 30%	1.00 1.00 1.00
290: Pernty-----	55	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments (gravel-size) >50%	1.00 1.00 1.00
Chen-----	30	Limitations Dusty	0.50	Limitations Dusty	0.50	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments (gravel-size) >50%	1.00 1.00 1.00
310: Bagval-----	40	No limitations		No limitations		No Limitations	
Bagval-----	25	No limitations		No limitations		No Limitations	

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Wetbag-----	15	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00
Wetbag-----	10	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth Occasional flooding	1.00 0.80
320: Franktown-----	75	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15%	1.00 1.00
		Fragments >3" 25 to 75%	0.08	Surface fragments (>3") 25- 75%	0.08	AWC < 2" to 40"	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
330: Oest-----	85	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Fragments > 3" > 30%	1.00
		Fragments >3" 25 to 75%	0.32	Surface fragments (>3") 25- 75%	0.32	AWC 2-4" to 40"	0.09
						Fragments (gravel size) 25- 50%	0.09
340: Aspocket-----	55	Limitations Fragments >10" .1 to 3%	0.76	Limitations Surface fragments (>10") .1-3% coverage	0.76	Limitations Slopes > 15%	1.00
		Slopes 15 - 25%	0.08			Fragments >3" 5 to 30% Fragments (gravel size) 25- 50%	0.32 0.15
Aspocket-----	30	Limitations Fragments >10" .1 to 3%	0.76	Limitations Surface fragments (>10") .1-3% coverage	0.76	Limitations Slopes > 15%	1.00
		Slopes 15 - 25%	0.08			Fragments >3" 5 to 30% Fragments (gravel size) 25- 50%	0.32 0.15
350: Leroman-----	45	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Slopes 15 - 25%	0.32			Fragments (gravel size) 25- 50%	0.99
						Fragments >3" 5 to 30%	0.68
Chenhigh-----	20	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Slopes 15 - 25%	0.08			AWC < 2" to 40" Slopes > 15%	1.00 1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Celeridge-----	10	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Slopes 15 - 25%	1.00 0.82 0.08	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.82	Limitations Bedrock depth < 20" Fragments > 3" > 30% Slopes > 15%	1.00 1.00 1.00
Dogbed-----	10	Limitations Slopes 15 - 25% Fragments >10" .1 to 3%	0.88 0.19	Limitations Surface fragments (>10") .1-3% coverage	0.19	Limitations Slopes > 15% Fragments (gravel-size) >50% Fragments >3" 5 to 30%	1.00 1.00 0.08
360: Monibasin-----	70	Limitations Fragments >10" .1 to 3%	0.76	Limitations Surface fragments (>10") .1-3% coverage	0.76	Limitations Fragments >3" 5 to 30% Fragments (gravel size) 25- 50% Slopes 8 to 15%	0.20 0.18 0.09
Vermdig-----	15	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00	Limitations Saturation < 12" depth	1.00
370: Celeridge-----	30	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Slopes 15 - 25%	1.00 0.82 0.32	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.82	Limitations Bedrock depth < 20" Fragments > 3" > 30% Slopes > 15%	1.00 1.00 1.00
Gerdog-----	25	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.32	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
Loope-----	20	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Surface fragments (>10") .1-3% coverage Slopes 25 to 40%	0.76 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Pinew-----	10	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC 2-4" to 40"	1.00 1.00 0.98

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
380: Joecut-----	40	Limitations Fragments >10" >3% Slopes > 25% Fragments >3" 25 to 75%	1.00 1.00 0.08	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40% Surface fragments (>3") 25- 75%	1.00 0.50 0.08	Limitations Slopes > 15% Fragments > 3" > 30%	1.00 1.00
Celeridge-----	20	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Slopes 15 - 25%	1.00 0.82 0.08	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.82	Limitations Bedrock depth < 20" Fragments > 3" > 30% Slopes > 15%	1.00 1.00 1.00
Joecut-----	15	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15%	1.00
Gerdog-----	10	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.08	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
381: Heenlake-----	15	Limitations Fragments >10" >3% Slopes > 25% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40% Surface fragments (>3") 25- 75%	1.00 0.50 0.18	Limitations Slopes > 15% Fragments > 3" > 30% Bedrock depth 20 to 40"	1.00 1.00 0.97
Loope-----	10	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Surface fragments (>10") .1-3% coverage Slopes 25 to 40%	0.76 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Joecut-----	30	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25- 50% Fragments >3" 5 to 30%	1.00 0.99 0.68
Joecut-----	30	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15%	1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
382: Joecut-----	55	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25- 50% Fragments >3" 5 to 30%	1.00 0.99 0.68
Joecut-----	30	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15%	1.00
390: Heenlake-----	40	Limitations Fragments >10" >3% Slopes > 25% Dusty	1.00 1.00 0.50	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40% Dusty	1.00 0.50 0.50	Limitations Slopes > 15% Fragments > 3" > 30% Bedrock depth 20 to 40"	1.00 1.00 0.97
Loope-----	30	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Surface fragments (>10") .1-3% coverage Slopes 25 to 40%	0.76 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Chenhigh-----	15	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.08	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
391: Heenlake-----	40	Limitations Fragments >10" >3% Slopes > 25% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40% Surface fragments (>3") 25- 75%	1.00 0.50 0.18	Limitations Slopes > 15% Fragments > 3" > 30% Bedrock depth 20 to 40"	1.00 1.00 0.97
Loope-----	25	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Surface fragments (>10") .1-3% coverage Slopes 25 to 40%	0.76 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Dogbed-----	20	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.19	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 0.19	Limitations Slopes > 15% Fragments (gravel-size) >50% Fragments >3" 5 to 30%	1.00 1.00 0.08

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
392: Heenlake-----	50	Limitations Fragments >10" >3% Slopes 15 - 25% Fragments >3" 25 to 75%	1.00 0.32 0.18	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.18	Limitations Fragments > 3" > 30% Slopes > 15% Bedrock depth 20 to 40"	1.00 1.00 0.97
Loope-----	35	Limitations Fragments >10" .1 to 3% Slopes 15 - 25%	0.76 0.32	Limitations Surface fragments (>10") .1-3% coverage	0.76	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments (gravel-size) >50%	1.00 1.00 1.00
400: Pinew-----	35	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes > 40%	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC 2-4" to 40"	1.00 1.00 0.98
Carshal-----	25	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Loope-----	15	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Celeridge-----	10	Limitations Slopes > 25% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.82	Limitations Surface fragments (>10") >3% coverage Slopes > 40% Surface fragments (>3") 25- 75%	1.00 1.00 0.82	Limitations Bedrock depth < 20" Slopes > 15% Fragments > 3" > 30%	1.00 1.00 1.00
401: Pinew-----	75	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC 2-4" to 40"	1.00 1.00 0.98
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
410: Wolfcut-----	85	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.32	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
420: Buggin-----	75	Limitations Slopes > 25%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Surface sand fractions 70 - 90% by wt.	0.74	Surface sand fractions 70 - 90% by wt.	0.74	AWC < 2" to 40"	1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
430: Newcone-----	75	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10") .1-3% coverage	0.19	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
440: Dogbed-----	35	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%	1.00
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10") .1-3% coverage	0.19	Fragments (gravel-size) >50%	1.00
						Fragments >3" 5 to 30%	0.08
Celeridge-----	25	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Slopes > 25%	1.00	Surface fragments (>3") 25- 75%	0.82	Slopes > 15%	1.00
		Fragments >3" 25 to 75%	0.82	Slopes 25 to 40%	0.50	Fragments > 3" > 30%	1.00
Carshal-----	20	Limitations Slopes > 25%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
Joecut-----	10	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Slopes > 25%	1.00	Slopes 25 to 40%	0.50		
450: Carshal-----	55	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Loope-----	20	Limitations Slopes > 25%	1.00	Limitations Surface fragments (>10") .1-3% coverage	0.76	Limitations Bedrock depth < 20"	1.00
		Fragments >10" .1 to 3%	0.76	Slopes 25 to 40%	0.50	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
460: Toejom-----	45	Limitations Surface sand fractions > 90% by wt.	1.00	Limitations Surface sand fractions > 90% by wt.	1.00	Limitations Bedrock depth < 20"	1.00
		Slopes > 25%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Slopes 25 to 40%	0.50	Coarse sand or sand surface	1.00
Pimogran-----	30	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Slopes > 25%	1.00	Surface sand fractions 70 - 90% by wt.	0.79	Slopes > 15%	1.00
		Surface sand fractions 70 - 90% by wt.	0.79	Slopes 25 to 40%	0.50	AWC < 2" to 40"	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
461: Toejom-----	40	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20"	1.00
		Surface sand fractions > 90% by wt.	1.00	Surface sand fractions > 90% by wt.	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Coarse sand or sand surface	1.00
Pimogran-----	35	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15%	1.00
		Surface sand fractions 70 - 90% by wt.	0.79	Surface sand fractions 70 - 90% by wt.	0.79	AWC < 2" to 40"	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
462: Toejom-----	40	Limitations Surface sand fractions > 90% by wt.	1.00	Limitations Surface sand fractions > 90% by wt.	1.00	Limitations Bedrock depth < 20"	1.00
		Slopes > 25%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Slopes 25 to 40%	0.50	Coarse sand or sand surface	1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Glenbrook-----	30	Limitations Slopes > 25% Surface sand fractions 70 - 90% by wt.	1.00 0.34	Limitations Slopes 25 to 40% Surface sand fractions 70 - 90% by wt.	0.50 0.34	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Pimogran-----	20	Limitations Fragments >10" >3% Slopes > 25% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.79	Limitations Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt. Slopes 25 to 40%	1.00 0.79 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
470: Sumeadow-----	55	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
Lostridge-----	30	Limitations Slopes > 25%	1.00	Limitations Slopes 25 to 40%	0.50	Limitations Slopes > 15% Fragments (gravel-size) >50% Bedrock depth 20 to 40"	1.00 1.00 0.54
471: Sumeadow-----	55	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15% AWC 2-4" to 40"	1.00 0.02
Sumeadow-----	30	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes 8 to 15% AWC 2-4" to 40"	0.09 0.02
480: Aspetill-----	60	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.08	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15% Fragments (gravel size) 25- 50% Fragments >3" 5 to 30%	1.00 0.82 0.32
Aspetill-----	25	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.08	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15% Fragments (gravel size) 25- 50% Fragments >3" 5 to 30%	1.00 0.82 0.32

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
481: Aspetill-----	50	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.08	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15% Fragments (gravel size) 25- 50% Fragments >3" 5 to 30%	1.00 0.82 0.32
Aspetill-----	35	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Slopes 15 - 25%	1.00 0.50 0.08	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.50	Limitations Fragments > 3" > 30% Slopes > 15% Fragments (gravel size) 25- 50%	1.00 1.00 0.01
490: Cloudburst-----	50	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Slopes 15 - 25%	1.00 0.82 0.32	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.82	Limitations Fragments > 3" > 30% Slopes > 15% Fragments (gravel size) 25- 50%	1.00 1.00 0.01
Murain-----	35	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Slopes 15 - 25%	1.00 0.82 0.32	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.82	Limitations Fragments > 3" > 30% Slopes > 15% Fragments (gravel size) 25- 50%	1.00 1.00 0.01
491: Cloudburst-----	45	Limitations Fragments >10" >3% Slopes > 25% Fragments >3" 25 to 75%	1.00 1.00 0.82	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75% Slopes 25 to 40%	1.00 0.82 0.50	Limitations Slopes > 15% Fragments > 3" > 30% Fragments (gravel size) 25- 50%	1.00 1.00 0.01
Murain-----	25	Limitations Fragments >10" >3% Slopes > 25% Fragments >3" 25 to 75%	1.00 1.00 0.82	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75% Slopes 25 to 40%	1.00 0.82 0.50	Limitations Slopes > 15% Fragments > 3" > 30% Fragments (gravel size) 25- 50%	1.00 1.00 0.01
Hardtil-----	15	Limitations Saturation < 12" depth Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.82	Limitations Saturation < 12" depth Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.82	Limitations Bedrock depth < 20" Saturation < 12" depth AWC < 2" to 40"	1.00 1.00 1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
500: Chrisflat-----	90	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Fragments (gravel-size) >50% Slopes 8 to 15% Fragments >3" 5 to 30%	1.00 0.09 0.08
510: Rubble Land-----	40	Not rated		Not rated		Not rated	
Lithnip-----	20	Limitations Surface fragments <3" >65% Slopes 15 - 25% Fragments >10" .1 to 3%	1.00 0.32 0.19	Limitations Surface fragments <3" >65% Surface fragments (>10") .1-3% coverage	1.00 0.19	Limitations Bedrock depth < 20" Fragments (gravel-size) >50% AWC < 2" to 40"	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
Fishsnooze-----	10	Limitations Slopes > 25%	1.00	Limitations Slopes 25 to 40%	0.14	Limitations Slopes > 15% Fragments (gravel size) 25- 50% AWC 2-4" to 40"	1.00 0.99 0.69
511: Rock Outcrop-----	40	Not rated		Not rated		Not rated	
Snowtell-----	30	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.32	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
Forsell-----	15	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.32	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Fragments (gravel-size) >50% Slopes > 15% AWC 2-4" to 40"	1.00 1.00 0.12
512: Rock Outcrop-----	50	Not rated		Not rated		Not rated	
Snowtell-----	40	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
513: Rubble Land-----	40	Not rated		Not rated		Not rated	

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Holdon-----	30	Limitations Slopes > 25%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Slopes > 40%	1.00	AWC < 2" to 40"	1.00
		Surface sand fractions 70 - 90% by wt.	0.74	Surface sand fractions 70 - 90% by wt.	0.74	Fragments (gravel-size) >50%	1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
520: Canfire-----	40	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
Crispy-----	35	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	AWC < 2" to 40"	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
530: Elaero-----	35	Limitations Slopes > 25%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Slopes > 40%	1.00	AWC < 2" to 40"	1.00
		Surface sand fractions 70 - 90% by wt.	0.70	Surface sand fractions 70 - 90% by wt.	0.70	Bedrock depth < 20"	0.99
Lockgate-----	25	Limitations Slopes > 25%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Slopes > 40%	1.00	AWC < 2" to 40"	1.00
		Surface sand fractions 70 - 90% by wt.	0.70	Surface sand fractions 70 - 90% by wt.	0.70	Fragments (gravel size) 25- 50%	0.96
Granhogany-----	15	Limitations Slopes > 25%	1.00	Limitations Surface sand fractions 70 - 90% by wt.	0.70	Limitations Bedrock depth < 20"	1.00
		Surface sand fractions 70 - 90% by wt.	0.70	Slopes 25 to 40%	0.50	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
Granidry-----	10	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Slopes > 25%	1.00	Slopes 25 to 40%	0.50	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
531: Elaero-----	55	Limitations Fragments >10" .1 to 3%	0.76	Limitations Surface fragments (>10") .1-3% coverage	0.76	Limitations AWC < 2" to 40" Bedrock depth < 20" Fragments >3" 5 to 30%	1.00 0.99 0.32
Elaero-----	30	Limitations Fragments >10" >3% Slopes > 25% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.70	Limitations Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt. Slopes 25 to 40%	1.00 0.70 0.50	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth < 20"	1.00 1.00 0.99
532: Elaero-----	55	Limitations Slopes > 25% Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.70	Limitations Surface fragments (>10") >3% coverage Slopes > 40% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.70	Limitations Slopes > 15% AWC < 2" to 40" Bedrock depth < 20"	1.00 1.00 0.99
Granidry-----	20	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
540: Lostcannon, moist-----	45	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.32	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15% Fragments (gravel-size) >50% Fragments >3" 5 to 30%	1.00 0.99 0.20
Lostcannon-----	40	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.32	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15% Fragments (gravel-size) >50% Fragments >3" 5 to 30%	1.00 0.99 0.20
560: Dunderberg-----	30	Limitations Very dusty Fragments >10" >3% Surface fragments <3" >65%	1.00 1.00 1.00	Limitations Very dusty Surface fragments (>10") >3% coverage Surface fragments <3" >65%	1.00 1.00 1.00	Limitations Fragments (gravel-size) >50% Slopes > 15% AWC 2-4" to 40"	1.00 1.00 0.01

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Dunderberg, warm-----	25	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Fragments (gravel-size) >50%	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15%	1.00
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	AWC 2-4" to 40"	0.01
Conwayridge-----	20	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Fragments > 3" > 30%	1.00
		Slopes 15 - 25%	0.32	Surface fragments (>3") 25- 75%	0.18	Fragments (gravel size) 25- 50%	0.99
Dunderberg, moist-----	10	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Fragments (gravel-size) >50%	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15%	1.00
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	AWC 2-4" to 40"	0.01
561: Dunderberg-----	40	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Fragments (gravel-size) >50%	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15%	1.00
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	AWC 2-4" to 40"	0.01
Dunderberg, warm-----	30	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Fragments (gravel-size) >50%	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15%	1.00
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	AWC 2-4" to 40"	0.01
Dunderberg, moist-----	15	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Fragments (gravel-size) >50%	1.00
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15%	1.00
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	AWC 2-4" to 40"	0.01
570: Angelwhine-----	35	Limitations Slopes > 25%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Slopes 25 to 40%	0.50	Fragments (gravel-size) >50%	1.00
						Fragments >3" 5 to 30%	0.32

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Hawkinspeak-----	25	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25- 50% AWC 2-4" to 40"	1.00 0.59 0.29
Hawkridge-----	25	Limitations Fragments >10" >3% Surface fragments <3" >65% Slopes 15 - 25%	1.00 1.00 0.08	Limitations Surface fragments (>10") >3% coverage Surface fragments <3" >65%	1.00 1.00	Limitations Bedrock depth < 20" Fragments (gravel-size) >50% AWC < 2" to 40"	1.00 1.00 1.00
580: Murnain-----	50	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.08	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15% Fragments (gravel size) 25- 50% Fragments >3" 5 to 30%	1.00 0.99 0.32
Shorthike-----	20	Limitations Slopes > 25% Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.77	Limitations Slopes > 40% Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.77	Limitations Slopes > 15% Fragments (gravel size) 25- 50% Loamy coarse sand surface	1.00 0.99 0.50
Murnain, moist-----	15	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25- 50% Fragments >3" 5 to 30%	1.00 0.99 0.32
581: Murnain-----	45	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.08	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15% Fragments (gravel size) 25- 50% Fragments >3" 5 to 30%	1.00 0.99 0.32
Murnain-----	40	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Slopes 15 - 25%	1.00 0.82 0.32	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.82	Limitations Fragments > 3" > 30% Slopes > 15% Fragments (gravel size) 25- 50%	1.00 1.00 0.01

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
590: Loope-----	40	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Surface fragments (>10") .1-3% coverage Slopes 25 to 40%	0.76 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Heenlake-----	30	Limitations Fragments >10" >3% Slopes > 25% Fragments >3" 25 to 75%	1.00 1.00 0.18	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40% Surface fragments (>3") 25-75%	1.00 0.50 0.18	Limitations Slopes > 15% Fragments > 3" > 30% Bedrock depth 20 to 40"	1.00 1.00 0.97
Carshal-----	15	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
591: Loope-----	40	Limitations Fragments >10" .1 to 3% Slopes 15 - 25%	0.76 0.32	Limitations Surface fragments (>10") .1-3% coverage	0.76	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments (gravel-size) >50%	1.00 1.00 1.00
Heenlake-----	30	Limitations Fragments >10" >3% Slopes 15 - 25% Fragments >3" 25 to 75%	1.00 0.32 0.18	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25-75%	1.00 0.18	Limitations Fragments > 3" > 30% Slopes > 15% Bedrock depth 20 to 40"	1.00 1.00 0.97
Celeridge-----	15	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Slopes 15 - 25%	1.00 0.82 0.32	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25-75%	1.00 0.82	Limitations Bedrock depth < 20" Fragments > 3" > 30% Slopes > 15%	1.00 1.00 1.00
592: Loope-----	30	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Surface fragments (>10") .1-3% coverage Slopes 25 to 40%	0.76 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Pinew-----	30	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC 2-4" to 40"	1.00 1.00 0.98

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Heenlake-----	25	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Slopes > 25%	1.00	Slopes 25 to 40%	0.50	Fragments > 3" > 30%	1.00
		Fragments >3" 25 to 75%	0.18	Surface fragments (>3") 25- 75%	0.18	Bedrock depth 20 to 40"	0.97
600: Snowtell-----	45	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Slopes 15 - 25%	0.32			AWC < 2" to 40"	1.00
						Slopes > 15%	1.00
Sonorapass-----	25	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes 15 - 25%	0.32			Slopes > 15%	1.00
						Bedrock depth < 20"	0.99
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
610: Forsell-----	50	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Fragments (gravel-size) >50%	1.00
		Slopes 15 - 25%	0.32			Slopes > 15%	1.00
						AWC 2-4" to 40"	0.12
Snowtell-----	25	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Slopes 15 - 25%	0.32			AWC < 2" to 40"	1.00
						Slopes > 15%	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
611: Forsell-----	50	Limitations Slopes > 25%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Fragments >10" >3%	1.00	Slopes > 40%	1.00	Fragments (gravel-size) >50%	1.00
						AWC 2-4" to 40"	0.12
Snowtell-----	25	Limitations Slopes > 25%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Fragments >10" >3%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
620: Indian Creek-----	90	No limitations		No limitations		Limitations Fragments (gravel-size) >50% Depth to pan < 20" AWC 2-4" to 40"	1.00 0.99 0.53
630: Olac-----	40	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Surface fragments (>10") .1-3% coverage Slopes 25 to 40%	0.76 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Flex-----	25	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Duco-----	20	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes > 40%	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
640: Koontz-----	55	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Surface fragments (>10") .1-3% coverage Slopes 25 to 40%	0.76 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Nosrac-----	30	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Surface fragments (>10") .1-3% coverage Slopes 25 to 40%	0.76 0.50	Limitations Slopes > 15% Fragments (gravel-size) >50% Fragments >3" 5 to 30%	1.00 1.00 0.03
650: Shree-----	90	Limitations Fragments >10" .1 to 3% Dusty	0.76 0.50	Limitations Surface fragments (>10") .1-3% coverage Dusty	0.76 0.50	Limitations Fragments (gravel-size) >50% Slopes 8 to 15% AWC 2-4" to 40"	1.00 0.16 0.08
651: Shree-----	50	Limitations Fragments >10" .1 to 3%	0.76	Limitations Surface fragments (>10") .1-3% coverage	0.76	Limitations Fragments (gravel-size) >50% AWC 2-4" to 40"	1.00 0.08

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Holbrook-----	35	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Fragments (gravel-size) >50%	1.00
		Dusty	0.50	Dusty	0.50	AWC 2-4" to 40"	0.89
660: Delhew-----	35	Limitations Slopes > 25%	1.00	Limitations Surface sand fractions 70 - 90% by wt.	0.77	Limitations Slopes > 15%	1.00
		Surface sand fractions 70 - 90% by wt.	0.77	Surface fragments (>10") .1-3% coverage	0.76	Fragments (gravel-size) >50%	1.00
		Fragments >10" .1 to 3%	0.76	Slopes 25 to 40%	0.50	AWC 2-4" to 40"	0.85
Grandridge-----	30	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Slopes 15 - 25%	0.08			AWC < 2" to 40"	1.00
						Slopes > 15%	1.00
Bakscratch-----	20	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Slopes > 25%	1.00	Slopes 25 to 40%	0.22	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
670: Springmeyer-----	85	No limitations		No limitations		Limitations Fragments (gravel size) 25- 50%	0.25
671: Springmeyer-----	50	No limitations		No limitations		Limitations Fragments (gravel size) 25- 50%	0.25
Cassiro-----	35	No limitations		No limitations		Limitations Fragments (gravel size) 25- 50%	0.41
680: Rolldown-----	40	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Fragments (gravel-size) >50%	1.00
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	Slopes > 15%	1.00
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	Fragments >3" 5 to 30%	0.32
Mountpatterson-----	25	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20"	1.00
		Very dusty	1.00	Very dusty	1.00	AWC < 2" to 40"	1.00
		Slopes 15 - 25%	0.08	Surface fragments (>3") 25- 75%	0.02	Fragments (gravel-size) >50%	1.00
Rubble Land-----	20	Not rated		Not rated		Not rated	

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
700: Coldtree-----	75	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% Fragments (gravel size) 25- 50%	1.00 0.79
		Surface sand fractions 70 - 90% by wt.	0.74	Surface sand fractions 70 - 90% by wt.	0.74	Loamy coarse sand surface	0.50
Rubble Land-----	10	Not rated		Not rated		Not rated	
710: Bakscratch-----	45	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes > 40%	1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Grandridge-----	25	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
McTom-----	15	Limitations Slopes > 25% Fragments >10" >3% Fragments >3" >75%	1.00 1.00 1.00	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") >75% Slopes > 40%	1.00 1.00 1.00	Limitations Slopes > 15% Fragments > 3" > 30% AWC 2-4" to 40"	1.00 1.00 0.53
720: Nohelp-----	55	Limitations Very dusty Slopes 15 - 25%	1.00 0.08	Limitations Very dusty	1.00	Limitations Slopes > 15% Fragments >3" 5 to 30% Fragments (gravel size) 25- 50%	1.00 0.32 0.15
Joenchris-----	35	Limitations Fragments >10" >3% Very dusty Slopes 15 - 25%	1.00 1.00 0.08	Limitations Surface fragments (>10") >3% coverage Very dusty	1.00 1.00	Limitations Slopes > 15% Fragments (gravel size) 25- 50% Fragments >3" 5 to 30%	1.00 0.18 0.01
730: Burchflat-----	55	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.08	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Fragments (gravel-size) >50% Slopes > 15% Fragments >3" 5 to 30%	1.00 1.00 0.08
Loope-----	30	Limitations Fragments >10" .1 to 3%	0.76	Limitations Surface fragments (>10") .1-3% coverage	0.76	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments (gravel-size) >50%	1.00 1.00 1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
731: Burchflat-----	45	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15% Fragments (gravel-size) >50% Fragments >3" 5 to 30%	1.00 1.00 0.08
Celeridge-----	20	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Slopes 15 - 25%	1.00 0.82 0.08	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.82	Limitations Bedrock depth < 20" Fragments > 3" > 30% Slopes > 15%	1.00 1.00 1.00
Loope-----	20	Limitations Slopes > 25% Fragments >10" .1 to 3%	1.00 0.76	Limitations Surface fragments (>10") .1-3% coverage Slopes 25 to 40%	0.76 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
740: Jackflat-----	55	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.08	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15% Fragments (gravel size) 25- 50% Fragments >3" 5 to 30%	1.00 0.98 0.26
Grandridge-----	30	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.08	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
760: Thiefridge-----	45	Limitations Slopes > 25% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.92	Limitations Surface fragments (>10") >3% coverage Slopes > 40% Surface fragments (>3") 25- 75%	1.00 1.00 0.92	Limitations Bedrock depth < 20" Slopes > 15% Fragments > 3" > 30%	1.00 1.00 1.00
Thiefridge-----	30	Limitations Slopes > 25% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.92	Limitations Surface fragments (>10") >3% coverage Slopes > 40% Surface fragments (>3") 25- 75%	1.00 1.00 0.92	Limitations Bedrock depth < 20" Slopes > 15% Fragments > 3" > 30%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
770: Sweetmount-----	50	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.08	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Fragments (gravel-size) >50% Slopes > 15% Fragments >3" 5 to 30%	1.00 1.00 0.08
Hawkinspeak-----	20	Limitations Fragments >10" >3% Slopes > 25%	1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15% Fragments (gravel size) 25- 50% AWC 2-4" to 40"	1.00 0.59 0.29
Hawkridge-----	15	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Slopes 15 - 25%	1.00 0.32 0.08	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.32	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments > 3" > 30%	1.00 1.00 1.00
780: Granhogany-----	65	Limitations Slopes > 25% Surface sand fractions 70 - 90% by wt.	1.00 0.70	Limitations Surface sand fractions 70 - 90% by wt. Slopes 25 to 40%	0.70 0.50	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
790: Dab-----	50	Limitations Slopes > 25% Surface fragments <3" >65% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Surface fragments <3" >65% Slopes > 40% Surface fragments (>10") .1-3% coverage	1.00 1.00 0.19	Limitations Slopes > 15% Fragments (gravel-size) >50% AWC 2-4" to 40"	1.00 1.00 0.14
Dab-----	35	Limitations Surface fragments <3" >65% Slopes > 25% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Surface fragments <3" >65% Slopes 25 to 40% Surface fragments (>10") .1-3% coverage	1.00 0.50 0.19	Limitations Slopes > 15% Fragments (gravel-size) >50% AWC 2-4" to 40"	1.00 1.00 0.14
791: Dab-----	45	Limitations Surface fragments <3" >65% Slopes > 25% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Surface fragments <3" >65% Slopes 25 to 40% Surface fragments (>10") .1-3% coverage	1.00 0.22 0.19	Limitations Slopes > 15% Fragments (gravel-size) >50% AWC 2-4" to 40"	1.00 1.00 0.15

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Longday-----	25	Limitations Slopes > 25% Surface fragments <3" >65% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.01	Limitations Surface fragments <3" >65% Slopes 25 to 40% Surface sand fractions 70 - 90% by wt.	1.00 0.50 0.01	Limitations Slopes > 15% Fragments (gravel-size) >50% Fragments >3" 5 to 30%	1.00 1.00 0.20
Thiefbridge-----	15	Limitations Fragments >10" >3% Fragments >3" 25 to 75% Slopes 15 - 25%	1.00 0.92 0.32	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.92	Limitations Bedrock depth < 20" Fragments > 3" > 30% AWC < 2" to 40"	1.00 1.00 1.00
792: Dab-----	35	Limitations Surface fragments <3" >65% Slopes > 25% Fragments >10" .1 to 3%	1.00 1.00 0.19	Limitations Surface fragments <3" >65% Slopes 25 to 40% Surface fragments (>10") .1-3% coverage	1.00 0.22 0.19	Limitations Slopes > 15% Fragments (gravel-size) >50% AWC 2-4" to 40"	1.00 1.00 0.14
Aspocket-----	25	Limitations Fragments >10" .1 to 3% Slopes 15 - 25%	0.76 0.32	Limitations Surface fragments (>10") .1-3% coverage	0.76	Limitations Slopes > 15% Fragments >3" 5 to 30% Fragments (gravel size) 25- 50%	1.00 0.32 0.15
Hawkridge-----	25	Limitations Fragments >10" >3% Slopes 15 - 25% Fragments >3" 25 to 75%	1.00 0.32 0.32	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.32	Limitations Bedrock depth < 20" AWC < 2" to 40" Fragments > 3" > 30%	1.00 1.00 1.00
800: Grandridge-----	60	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.08	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
Delhew-----	30	Limitations Slopes > 25% Surface sand fractions 70 - 90% by wt. Fragments >10" .1 to 3%	1.00 0.77 0.76	Limitations Surface sand fractions 70 - 90% by wt. Surface fragments (>10") .1-3% coverage Slopes 25 to 40%	0.77 0.76 0.50	Limitations Slopes > 15% Fragments (gravel-size) >50% AWC 2-4" to 40"	1.00 1.00 0.85

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
801: Grandridge-----	40	Limitations Fragments >10" >3% Slopes 15 - 25%	1.00 0.08	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Bedrock depth < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
Delhew-----	25	Limitations Slopes > 25% Surface sand fractions 70 - 90% by wt. Fragments >10" .1 to 3%	1.00 0.77 0.76	Limitations Surface sand fractions 70 - 90% by wt. Surface fragments (>10") .1-3% coverage Slopes 25 to 40%	0.77 0.76 0.50	Limitations Slopes > 15% Fragments (gravel-size) >50% AWC 2-4" to 40"	1.00 1.00 0.85
Bullville-----	20	Limitations Slopes > 25% Fragments >10" >3%	1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Slopes > 15% AWC < 2" to 40" Fragments (gravel-size) >50%	1.00 1.00 1.00
810: Corbett-----	55	Limitations Fragments >10" >3% Slopes > 25% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.41	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40% Surface sand fractions 70 - 90% by wt.	1.00 0.50 0.41	Limitations Slopes > 15% AWC < 2" to 40" Fragments > 3" > 30%	1.00 1.00 1.00
Toiyabe-----	20	Limitations Fragments >10" >3% Slopes > 25% Fragments >3" 25 to 75%	1.00 1.00 0.42	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40% Surface fragments (>3") 25- 75%	1.00 0.50 0.42	Limitations Bedrock depth < 20" Slopes > 15% Fragments > 3" > 30%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
820: Freelpeak-----	50	Limitations Slopes > 25% Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.08	Limitations Surface fragments (>10") >3% coverage Slopes > 40% Surface fragments (>3") 25- 75%	1.00 1.00 0.08	Limitations Slopes > 15% AWC < 2" to 40" Fragments (gravel-size) >50%	1.00 1.00 1.00
Windyridge-----	25	Limitations Slopes 15 - 25% Fragments >10" .1 to 3% Surface sand fractions 70 - 90% by wt.	0.88 0.76 0.70	Limitations Surface fragments (>10") .1-3% coverage Surface sand fractions 70 - 90% by wt.	0.76 0.70	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
830: Windyridge-----	45	Limitations Fragments >10" .1 to 3%	0.76	Limitations Surface fragments (>10") .1-3% coverage	0.76	Limitations Bedrock depth < 20"	1.00
		Surface sand fractions 70 - 90% by wt.	0.70	Surface sand fractions 70 - 90% by wt.	0.70	AWC < 2" to 40"	1.00
		Slopes 15 - 25%	0.32			Fragments (gravel-size) >50%	1.00
Freelpeak-----	25	Limitations Fragments >10" >3%	1.00	Limitations Surface fragments (>10") >3% coverage	1.00	Limitations Slopes > 15%	1.00
		Slopes 15 - 25%	0.88	Surface fragments (>3") 25- 75%	0.08	AWC < 2" to 40"	1.00
		Fragments >3" 25 to 75%	0.08			Fragments (gravel-size) >50%	1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
840: Lavaspring-----	55	Limitations Saturation < 12" depth Very dusty	1.00 1.00	Limitations Saturation < 12" depth Very dusty	1.00 1.00	Limitations Saturation < 12" depth Occasional flooding	1.00 0.80
Trespass-----	25	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Fragments (gravel size) 25- 50%	0.26
						Fragments >3" 5 to 30%	0.05
Lavaspring-----	10	Limitations Saturation < 12" depth Very dusty	1.00 1.00	Limitations Saturation < 12" depth Very dusty	1.00 1.00	Limitations Saturation < 12" depth Occasional flooding	1.00 0.80
850: Lunder-----	90	No limitations		No limitations		Limitations Depth to pan < 20" AWC < 2" to 40"	1.00 1.00
						Fragments (gravel-size) >50%	0.99
851: Lunder-----	50	Limitations Slopes 15 - 25%	0.08	No limitations		Limitations Depth to pan < 20" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00
Leviathan-----	35	Limitations Slopes > 25%	1.00	Limitations Surface fragments (>10") .1-3% coverage	0.76	Limitations Slopes > 15%	1.00
		Fragments >10" .1 to 3%	0.76	Slopes 25 to 40%	0.50	Fragments (gravel-size) >50%	0.99
						Fragments >3" 5 to 30%	0.20

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
860: Hardnut-----	55	Limitations Slopes > 25% Fragments >10" >3% Very dusty	1.00 1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage Very dusty	1.00 1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% Fragments (gravel-size) >50%	1.00 1.00 1.00
Ocashe-----	30	Limitations Slopes > 25% Surface fragments <3" >65% Fragments >10" >3%	1.00 1.00 1.00	Limitations Slopes > 40% Surface fragments <3" >65% Surface fragments (>10") >3% coverage	1.00 1.00 1.00	Limitations Bedrock depth < 20" Slopes > 15% AWC < 2" to 40"	1.00 1.00 1.00
870: Epvip-----	40	Limitations Very dusty Fragments >10" .1 to 3% Slopes 15 - 25%	1.00 0.76 0.32	Limitations Very dusty Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Bedrock depth < 20" Fragments (gravel-size) >50% Slopes > 15%	1.00 1.00 1.00
Domehill-----	30	Limitations Very dusty Fragments >10" .1 to 3% Slopes 15 - 25%	1.00 0.76 0.08	Limitations Very dusty Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Bedrock depth < 20" Fragments (gravel-size) >50% Slopes > 15%	1.00 1.00 1.00
Ashflat-----	15	Limitations Very dusty Fragments >10" .1 to 3%	1.00 0.19	Limitations Very dusty Surface fragments (>10") .1-3% coverage	1.00 0.19	Limitations Fragments (gravel size) 25- 50% Slopes 8 to 15% Fragments >3" 5 to 30%	0.36 0.09 0.01
871: Halfash-----	50	Limitations Very dusty Fragments >10" >3% Slopes 15 - 25%	1.00 1.00 0.32	Limitations Very dusty Surface fragments (>10") >3% coverage	1.00 1.00	Limitations Bedrock depth < 20" Fragments (gravel-size) >50% Slopes > 15%	1.00 1.00 1.00
Domehill-----	35	Limitations Very dusty Fragments >10" .1 to 3% Slopes 15 - 25%	1.00 0.76 0.08	Limitations Very dusty Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Bedrock depth < 20" Fragments (gravel-size) >50% Slopes > 15%	1.00 1.00 1.00
872: Epvip-----	40	Limitations Very dusty Slopes > 25% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Very dusty Surface fragments (>10") .1-3% coverage Slopes 25 to 40%	1.00 0.76 0.50	Limitations Bedrock depth < 20" Slopes > 15% Fragments (gravel-size) >50%	1.00 1.00 1.00

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Vetash-----	25	Limitations Very dusty Slopes > 25%	1.00 1.00	Limitations Very dusty Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15% Fragments (gravel-size) >50% Fragments >3" 5 to 30%	1.00 1.00 0.08
Epvip-----	20	Limitations Very dusty Slopes > 25% Fragments >10" .1 to 3%	1.00 1.00 0.76	Limitations Very dusty Surface fragments (>10") .1-3% coverage Slopes 25 to 40%	1.00 0.76 0.50	Limitations Bedrock depth < 20" Slopes > 15% Fragments (gravel-size) >50%	1.00 1.00 1.00
873: Epvip-----	35	Limitations Very dusty Fragments >10" .1 to 3% Slopes 15 - 25%	1.00 0.76 0.08	Limitations Very dusty Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Bedrock depth < 20" Fragments (gravel-size) >50% Slopes > 15%	1.00 1.00 1.00
Hardnut-----	35	Limitations Slopes > 25% Fragments >10" >3% Very dusty	1.00 1.00 1.00	Limitations Surface fragments (>10") >3% coverage Very dusty Slopes 25 to 40%	1.00 1.00 0.50	Limitations Bedrock depth < 20" Slopes > 15% Fragments (gravel-size) >50%	1.00 1.00 1.00
Vetash-----	15	Limitations Very dusty Slopes > 25%	1.00 1.00	Limitations Very dusty Slopes 25 to 40%	1.00 0.50	Limitations Slopes > 15% Fragments (gravel-size) >50% Fragments >3" 5 to 30%	1.00 1.00 0.08
880: Mopana-----	90	Limitations Very dusty Fragments >10" >3% Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.01	Limitations Very dusty Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.01	Limitations Depth to pan < 20" Fragments (gravel-size) >50% AWC 2-4" to 40"	1.00 0.99 0.85
890: Masonic-----	40	Limitations Very dusty Fragments >10" >3% Slopes 15 - 25%	1.00 1.00 0.32	Limitations Very dusty Surface fragments (>10") >3% coverage Surface sand fractions 70 - 90% by wt.	1.00 1.00 0.01	Limitations Fragments (gravel-size) >50% Slopes > 15% Bedrock depth < 20"	1.00 1.00 0.99

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
Epvip-----	30	Limitations Very dusty Fragments >10" .1 to 3% Slopes 15 - 25%	1.00 0.76 0.32	Limitations Very dusty Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Bedrock depth < 20" Fragments (gravel-size) >50% Slopes > 15%	1.00 1.00 1.00
Domehill-----	15	Limitations Very dusty Fragments >10" .1 to 3%	1.00 0.76	Limitations Very dusty Surface fragments (>10") .1-3% coverage	1.00 0.76	Limitations Bedrock depth < 20" Fragments (gravel-size) >50% AWC < 2" to 40"	1.00 1.00 0.99
900: Brokenhoe-----	60	Limitations Very dusty Fragments >10" >3% Fragments >3" 25 to 75%	1.00 1.00 0.20	Limitations Very dusty Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 1.00 0.20	Limitations Fragments > 3" > 30% Slopes > 15% Depth to pan < 20"	1.00 1.00 0.99
Fisherdig-----	25	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Depth to pan < 20" AWC 2-4" to 40" Fragments >3" 5 to 30%	1.00 0.92 0.92
910: Indian Creek-----	60	No limitations		No limitations		Limitations Fragments (gravel-size) >50% Depth to pan < 20" AWC 2-4" to 40"	1.00 0.99 0.53
Haybourne-----	25	No limitations		No limitations		Limitations Fragments (gravel size) 25- 50% AWC 2-4" to 40"	0.50 0.01
920: Aquic Torrifluvents----	35	Limitations Fragments >10" >3% Fragments >3" 25 to 75%	1.00 0.82	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.82	Limitations Fragments > 3" > 30% AWC < 2" to 40"	1.00 1.00
Conway-----	25	No limitations		No limitations		Limitations Occasional flooding AWC 2-4" to 40"	0.80 0.05
Torrifluventic Haploxerolls-----	25	Limitations Fragments >10" >3% Fragments >3" 25 to 75%	1.00 0.92	Limitations Surface fragments (>10") >3% coverage Surface fragments (>3") 25- 75%	1.00 0.92	Limitations Fragments > 3" > 30% AWC 2-4" to 40"	1.00 0.94

TABLE 14.--Urban and Recreation (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and Trails		Off-Road Motorcycle Trails		Lawns, Landscaping, Golf Fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
930: Lavaspring-----	60	Limitations Very dusty	1.00	Limitations Very dusty	1.00	Limitations Occasional flooding	0.80
Lavaspring-----	25	Limitations Saturation < 12" depth Very dusty	1.00 1.00	Limitations Saturation < 12" depth Very dusty	1.00 1.00	Limitations Saturation < 12" depth Occasional flooding	1.00 0.80
960: Rose Creek-----	85	Limitations Frequent flooding	0.50	Limitations Frequent flooding	0.50	Limitations Frequent flooding	0.90
998: Dumps-----	60	Not rated		Not rated		Not rated	
Pits-----	30	Not rated		Not rated		Not rated	
999: Water-----	100	Not rated		Not rated		Not rated	

The interpretation for paths and trails evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, fragments less than or equal to or greater than 3 inches in size, clay and sand content in surface, fragments on the surface greater than or equal to 10 inches in size, Unified classes for high organic matter (PT, OL, OH), soil dustiness and the potential of the soil to erosion by water.

The interpretation for off-road motorcycle trails evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, soil dustiness, fragments greater than, equal to or greater than 3 inches in size, sand or clay content in the surface, and Unified classes for high organic matter (PT, OL, OH).

The interpretation for lawn, landscaping, and golf fairways evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, depth to bedrock, depth to cemented pan, fragments greater than, equal to or less than 3 inches in size, Unified class for high organic matter (PT, OL, OH), soil dustiness, sand or clay surface content, fragments on the surface greater than or equal to 10 inches in size, soil pH, salinity (EC), sodium content (SAR), calcium carbonates and sulfur content.

TABLE 15.--Building Site Development (Part 1)

Pacific Southwest MLRA Office Interpretations

The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only three highest value limitations are listed. There may be more limitations. Fine earth fractions and coarse fragments are reported on a weight basis. A brief rating criteria summary and abbreviations are listed on the last page of this report.

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
100: Lithnip-----	40	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Hawkinspeak-----	30	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
101: Lithnip, moist-----	40	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Rock Outcrop-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Fishsnooze-----	20	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.89 0.10	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.89	Limitations Slopes > 8% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.89 0.10
102: Lithnip-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Rock Outcrop-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Fishsnooze-----	20	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.89 0.10	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.89	Limitations Slopes > 8% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.89 0.10
103: Lithnip-----	40	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Meiss-----	30	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Hawkinspeak-----	15	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
110: Jobsis-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 0.99	Limitations Slopes > 8%	1.00
Whittell-----	25	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Fragments (>3") >50% Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 1.00 0.26	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
111: Whittell-----	45	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Fragments (>3") >50% Bedrock (soft) from 20 to 40"	1.00 1.00 0.26	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Jobsis-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 0.99	Limitations Slopes > 8%	1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
112: Jobsis-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 0.99	Limitations Slopes > 8%	1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Whittell-----	25	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Fragments (>3") >50% Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 1.00 0.26	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
113: Whittell-----	45	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Fragments (>3") >50% Bedrock (soft) from 20 to 40"	1.00 1.00 0.26	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Jobsis-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 0.99	Limitations Slopes > 8%	1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
120: Toiyabe-----	45	Limitations Bedrock (soft) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.09	Limitations Slopes > 15% Bedrock (soft) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.09	Limitations Bedrock (soft) < 20" depth Slopes > 8% Fragments (>3") 25 to 50%	1.00 1.00 0.09
Corbett-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.95	Limitations Slopes > 8%	1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
121: Toiyabe-----	45	Limitations Bedrock (soft) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.09	Limitations Bedrock (soft) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.09	Limitations Bedrock (soft) < 20" depth Slopes > 8% Fragments (>3") 25 to 50%	1.00 1.00 0.09

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Corbett-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.95	Limitations Slopes > 8%	1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
122: Toiyabe-----	50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.09	Limitations Slopes > 15% Bedrock (soft) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.09	Limitations Bedrock (soft) < 20" depth Slopes > 8% Fragments (>3") 25 to 50%	1.00 1.00 0.09
Corbett-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.95	Limitations Slopes > 8%	1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
130: Sofgran-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Klauspeak-----	30	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.05	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.05	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.05
Temo-----	15	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
131: Sofgran-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Temo-----	25	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Shalgran-----	20	Limitations Bedrock (soft) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.76	Limitations Slopes > 15% Bedrock (soft) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.76	Limitations Bedrock (soft) < 20" depth Slopes > 8% Fragments (>3") 25 to 50%	1.00 1.00 0.76

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
132: Sofgran-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Temo-----	25	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
140: Temo-----	40	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Dagget-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
150: Mottskel-----	85	Limitations Flooding >= rare Fragments (>3") 25 to 50% Slopes 8 to 15%	1.00 0.93 0.16	Limitations Flooding >= rare Fragments (>3") 25 to 50% Slopes 8 to 15%	1.00 0.93 0.16	Limitations Slopes > 8% Flooding >= rare Fragments (>3") 25 to 50%	1.00 1.00 0.93
160: Hopeval-----	50	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth Slopes are from 4 to 8%	1.00 1.00 0.26
Hopeval-----	35	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth Slopes are from 4 to 8%	1.00 1.00 0.26
162: Corralval-----	45	Limitations Flooding >= rare Saturation from 18 to 30" depth	1.00 0.01	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 0.99	Limitations Flooding >= rare Slopes are from 4 to 8% Saturation from 18 to 30" depth	1.00 0.02 0.01

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Hopeval-----	45	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth Slopes are from 4 to 8%	1.00 1.00 0.02
170: Burnlake-----	60	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Roadcat-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
171: Stumpatil-----	65	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Morscour-----	20	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
172: Stumpatil-----	85	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
173: Stumpatil-----	85	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
174: Stumpatil-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Sonorapass-----	30	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 0.99 0.12	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.12	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 0.99 0.12
Snowtell-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
180: Shalgran-----	70	Limitations Bedrock (soft) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.76	Limitations Slopes > 15% Bedrock (soft) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.76	Limitations Bedrock (soft) < 20" depth Slopes > 8% Fragments (>3") 25 to 50%	1.00 1.00 0.76
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
190:							
Hopeval-----	50	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00
Hopeval-----	35	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00
200:							
Cavebear-----	35	Limitations Flooding >= rare Saturation from 18 to 30" depth	1.00 0.98	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation from 18 to 30" depth Slopes are from 4 to 8%	1.00 0.98 0.26
Hopeval-----	25	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth Slopes are from 4 to 8%	1.00 1.00 0.26
Hopeval-----	20	Limitations Flooding >= rare Saturation < 18" depth	1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth Slopes are from 4 to 8%	1.00 1.00 0.26
210:							
Waterpeak-----	80	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.76	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.76	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.76
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
211:							
Waterpeak-----	50	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.76	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.76	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.76
Buggin-----	25	Limitations Bedrock (soft) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (soft) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (soft) < 20" depth Slopes > 8% Fragments (>3") 25 to 50%	1.00 1.00 0.01
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
212:							
Waterpeak-----	45	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.76	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.76	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.76
Sofgran-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Temo-----	15	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
220:							
Hardtil-----	45	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 8% Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00
Alpineco-----	25	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Fragments (>3") >50% Slopes > 15% Saturation < 2.5' depth	1.00 1.00 0.99	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Rock Outcrop-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
221:							
Hardtil-----	45	Limitations Slopes > 15% Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00	Limitations Slopes > 15% Saturation < 2.5' depth Bedrock (hard) < 40" depth	1.00 1.00 1.00	Limitations Slopes > 8% Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00
Alpineco-----	25	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Fragments (>3") >50% Saturation < 2.5' depth	1.00 1.00 0.99	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Rock Outcrop-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
222:							
Hardtil-----	40	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 8% Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Alpineco-----	25	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Fragments (>3") >50% Slopes > 15% Saturation < 2.5' depth	1.00 1.00 0.99	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Rock Outcrop-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
230: Hawkinspeak-----	45	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
Thiefridge-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.94
Angelwhine-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
231: Hawkinspeak-----	50	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
Hawkinspeak-----	35	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
232: Hawkinspeak-----	45	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
Hawkinspeak-----	25	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
Hawkridge-----	15	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
233: Angelwhine-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Hawkinspeak-----	30	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
Hawkridge-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
234: Hawkinspeak-----	40	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
Hawkinspeak-----	25	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
Thiefridge-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.94
235: Hawkinspeak-----	35	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
Hawkinspeak-----	30	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
Angelwhine-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
240: Granylith-----	45	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 8% Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Hargran-----	25	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.08 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 15% Saturation < 2.5' depth	1.00 1.00 0.99	Limitations Slopes > 8% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.08 0.01
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
250: Florand-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Lostridge-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.54	Limitations Slopes > 8%	1.00
Fishsnooze-----	15	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.90 0.10	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.90	Limitations Slopes > 8% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.90 0.10
260: Hawkridge-----	35	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Hawkinspeak-----	30	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
Hawkinspeak-----	20	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
261: Hawkridge-----	30	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Lithnip-----	25	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Hawkinspeak-----	20	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
262: Domehill-----	50	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Kiote-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
270: Duco-----	40	Limitations Slopes > 15% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Smallcone-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Cagle-----	15	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Shrink-swell (LEP >6) Bedrock (soft) from 20 to 40"	1.00 1.00 0.64	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
271: Duco-----	40	Limitations Slopes > 15% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Vetagrande-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Pinenut-----	20	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
280: Longcreek-----	50	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.66	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.66	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.66

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Devada-----	35	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00	Limitations Shrink-swell (LEP >6) Bedrock (hard) < 40" depth	1.00 1.00	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP >6) Slopes are from 4 to 8%	1.00 1.00 0.02
290: Pernty-----	55	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Chen-----	30	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.50 0.16	Limitations Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.50 0.16	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
310: Bagval-----	40	Limitations Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00	Limitations Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00	Limitations Flooding >= rare Shrink-swell (LEP >6) Slopes are from 4 to 8%	1.00 1.00 0.02
Bagval-----	25	Limitations Flooding >= rare Shrink-swell (LEP >6)	1.00 1.00	Limitations Flooding >= rare Shrink-swell (LEP >6) Saturation from 2.5' to 6' depth	1.00 1.00 0.53	Limitations Flooding >= rare Shrink-swell (LEP >6) Slopes are from 4 to 8%	1.00 1.00 0.02
Wetbag-----	15	Limitations Flooding >= rare Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Wetbag-----	10	Limitations Flooding >= rare Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Flooding >= rare Saturation < 2.5' depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
320: Franktown-----	75	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
330: Oest-----	85	Limitations Fragments (>3") 25 to 50%	0.61	Limitations Fragments (>3") 25 to 50%	0.61	Limitations Fragments (>3") 25 to 50%	0.61
						Slopes are from 4 to 8%	0.26
340: Aspocket-----	55	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.27	Fragments (>3") 25 to 50%	0.27	Fragments (>3") 25 to 50%	0.27
Aspocket-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.27	Fragments (>3") 25 to 50%	0.27	Fragments (>3") 25 to 50%	0.27
350: Leroman-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.15		
Chenhig-----	20	Limitations Bedrock (hard) < 20" depth	1.00	Limitations Shrink-swell (LEP >6)	1.00	Limitations Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Shrink-swell (LEP >6)	1.00
Celeridge-----	10	Limitations Bedrock (hard) < 20" depth	1.00	Limitations Bedrock (hard) < 40" depth	1.00	Limitations Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock (hard) < 20" depth	1.00
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01
Dogbed-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
360: Monibasin-----	70	Limitations Fragments (>3") 25 to 50%	0.82	Limitations Fragments (>3") 25 to 50%	0.82	Limitations Slopes > 8%	1.00
		Slopes 8 to 15%	0.09	Slopes 8 to 15%	0.09	Fragments (>3") 25 to 50%	0.82
Vermdig-----	15	Limitations Saturation < 18" depth	1.00	Limitations Saturation < 2.5' depth	1.00	Limitations Saturation < 18" depth	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
						Slopes are from 4 to 8%	0.26
370: Celeridge-----	30	Limitations Bedrock (hard) < 20" depth	1.00	Limitations Bedrock (hard) < 40" depth	1.00	Limitations Slopes > 8%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock (hard) < 20" depth	1.00
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Gerdog-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Loope-----	20	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Pinew-----	10	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
380: Joecut-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
Celeridge-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
Joecut-----	15	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Saturation from 2.5' to 6' depth Shrink-swell (LEP 3-6)	1.00 0.97 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
Gerdog-----	10	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
381: Heenlake-----	15	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.11	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Shrink-swell (LEP 3-6)	1.00 0.97 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.11
Loope-----	10	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Joecut-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Joecut-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Saturation from 2.5' to 6' depth Shrink-swell (LEP 3-6)	1.00 0.97 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
382: Joecut-----	55	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
Joecut-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Saturation from 2.5' to 6' depth Shrink-swell (LEP 3-6)	1.00 0.97 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
390: Heenlake-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.09	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Shrink-swell (LEP 3-6)	1.00 0.97 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.09
Loope-----	30	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Chenhigh-----	15	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP >6) Slopes > 15%	1.00 1.00 1.00	Limitations Shrink-swell (LEP >6) Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
391: Heenlake-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.11	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Shrink-swell (LEP 3-6)	1.00 0.97 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.11
Loope-----	25	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Dogbed-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
392: Heenlake-----	50	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.11	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Shrink-swell (LEP 3-6)	1.00 0.97 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.11
Loope-----	35	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
400: Pinew-----	35	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Carshal-----	25	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Loope-----	15	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Celeridge-----	10	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
401: Pinew-----	75	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
410: Wolfcut-----	85	Limitations Flooding >= rare Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.15	Limitations Flooding >= rare Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.15	Limitations Slopes > 8% Flooding >= rare Fragments (>3") 25 to 50%	1.00 1.00 0.15
420: Buggin-----	75	Limitations Bedrock (soft) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 15% Bedrock (soft) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (soft) < 20" depth Slopes > 8% Fragments (>3") 25 to 50%	1.00 1.00 0.01

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
430: Newcone-----	75	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
440: Dogbed-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Celeridge-----	25	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
Carshal-----	20	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Joecut-----	10	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Saturation from 2.5' to 6' depth Shrink-swell (LEP 3-6)	1.00 0.97 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
450: Carshal-----	55	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Loope-----	20	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
460: Toejom-----	45	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Pimogran-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
461: Toejom-----	40	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Pimogran-----	35	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
462: Toejom-----	40	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Glenbrook-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Pimogran-----	20	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
470: Sumeadow-----	55	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.13	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.13	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.13
Lostridge-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.54	Limitations Slopes > 8%	1.00
471: Sumeadow-----	55	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.13	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.13	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.13

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Sumeadow-----	30	Limitations Fragments (>3") 25 to 50% Slopes 8 to 15%	0.13 0.09	Limitations Fragments (>3") 25 to 50% Slopes 8 to 15%	0.13 0.09	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.13
480: Aspetill-----	60	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.59	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.59	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.59
Aspetill-----	25	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.59	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.59	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.59
481: Aspetill-----	50	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.59	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.59	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.59
Aspetill-----	35	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.85	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.85	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.85
490: Cloudburst-----	50	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Murain-----	35	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
491: Cloudburst-----	45	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Murain-----	25	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Hardtil-----	15	Limitations Saturation < 18" depth Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 8% Saturation < 18" depth Bedrock (hard) < 20" depth	1.00 1.00 1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
500: Chrisflat-----	90	Limitations Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50% Slopes 8 to 15%	0.50 0.09 0.09	Limitations Fragments (>3") 25 to 50% Slopes 8 to 15%	0.09 0.09	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.09
510: Rubble Land-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Lithnip-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Fishsnooze-----	10	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.90 0.10	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.90	Limitations Slopes > 8% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.90 0.10
511: Rock Outcrop-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Snowtell-----	30	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
Forsell-----	15	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.73	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.73	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.73
512: Rock Outcrop-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Snowtell-----	40	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
513: Rubble Land-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Holdon-----	30	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Fragments (>3") >50% Bedrock (hard) from 40 to 60"	1.00 1.00 0.71	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
520: Canfire-----	40	Limitations Slopes > 15% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Crispy-----	35	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
530: Elaero-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 0.99	Limitations Slopes > 8%	1.00
Lockgate-----	25	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.01	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.01	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.01
Granhogany-----	15	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Granidry-----	10	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
531: Elaero-----	55	Limitations Slopes 8 to 15%	0.09	Limitations Bedrock (soft) < 20" depth Slopes 8 to 15%	0.99 0.09	Limitations Slopes > 8%	1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Elaero-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 0.99	Limitations Slopes > 8%	1.00
532: Elaero-----	55	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 0.99	Limitations Slopes > 8%	1.00
Granidry-----	20	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
540: Lostcannon, moist-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Lostcannon-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
560: Dunderberg-----	30	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.88	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.88	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.88
Dunderberg, warm-----	25	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.88	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.88	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.88
Conwayridge-----	20	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Dunderberg, moist-----	10	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.88	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.88	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.88
561: Dunderberg-----	40	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.88	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.88	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.88
Dunderberg, warm-----	30	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.88	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.88	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.88

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Dunderberg, moist-----	15	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.88	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.88	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.88
570: Angelwhine-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Hawkinspeak-----	25	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
Hawkridge-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
580: Murain-----	50	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Shorthike-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Murain, moist-----	15	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
581: Murain-----	45	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
Murain-----	40	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00
590: Loope-----	40	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Heenlake-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.11	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Shrink-swell (LEP 3-6)	1.00 0.97 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.11
Carshal-----	15	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
591: Loope-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Heenlake-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.11	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Shrink-swell (LEP 3-6)	1.00 0.97 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.11
Celeridge-----	15	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
592: Loope-----	30	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Pinew-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Heenlake-----	25	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.11	Limitations Slopes > 15% Bedrock (soft) from 20 to 40" Shrink-swell (LEP 3-6)	1.00 0.97 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.11
600: Snowtell-----	45	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Sonorapass-----	25	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 0.99 0.12	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.12	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 0.99 0.12
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
610: Forsell-----	50	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.73	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.73	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.73
Snowtell-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
611: Forsell-----	50	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.73	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.73	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.73
Snowtell-----	25	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
620: Indian Creek-----	90	Limitations Shrink-swell (LEP >6)	1.00	Limitations Shrink-swell (LEP >6) Pan (thin) < 20" depth	1.00 0.99	Limitations Shrink-swell (LEP >6) Slopes are from 4 to 8%	1.00 0.26
630: Olac-----	40	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
Flex-----	25	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Duco-----	20	Limitations Slopes > 15% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
640: Koontz-----	55	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Nosrac-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
650: Shree-----	90	Limitations Flooding >= rare Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.50 0.16	Limitations Flooding >= rare Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.50 0.16	Limitations Slopes > 8% Flooding >= rare Shrink-swell (LEP 3-6)	1.00 1.00 0.50
651: Shree-----	50	Limitations Flooding >= rare Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Flooding >= rare Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Flooding >= rare Shrink-swell (LEP 3-6) Slopes are from 4 to 8%	1.00 0.50 0.26
Holbrook-----	35	Limitations Flooding >= rare Fragments (>3") 25 to 50%	1.00 0.12	Limitations Flooding >= rare Fragments (>3") 25 to 50%	1.00 0.12	Limitations Flooding >= rare Slopes are from 4 to 8% Fragments (>3") 25 to 50%	1.00 0.26 0.12
660: Delhew-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Grandridge-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Bakscratch-----	20	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
670: Springmeyer-----	85	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes are from 4 to 8% Shrink-swell (LEP 3-6)	0.50 0.50

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
671: Springmeyer-----	50	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Shrink-swell (LEP 3-6) Slopes are from 4 to 8%	0.50 0.26
Cassiro-----	35	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Shrink-swell (LEP 3-6) Slopes are from 4 to 8%	0.50 0.26
680: Rolldown-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Mountpatterson-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.08	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.08	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.08
Rubble Land-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
700: Coldtree-----	75	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.83	Limitations Slopes > 15% Bedrock (hard) from 40 to 60" Fragments (>3") 25 to 50%	1.00 0.88 0.83	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.83
Rubble Land-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
710: Bakscratch-----	45	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Grandridge-----	25	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
McTom-----	15	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Fragments (>3") >50% Bedrock (soft) from 20 to 40"	1.00 1.00 0.15	Limitations Slopes > 8% Fragments (>3") >50%	1.00 1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
720: Nohelp-----	55	Limitations Shrink-swell (LEP >6) Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Shrink-swell (LEP >6) Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.01
Joenchris-----	35	Limitations Shrink-swell (LEP >6) Slopes > 15%	1.00 1.00	Limitations Shrink-swell (LEP >6) Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6)	1.00 1.00
730: Burchflat-----	55	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.21 0.06	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.21	Limitations Slopes > 8% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.21 0.06
Loope-----	30	Limitations Bedrock (hard) < 20" depth Slopes 8 to 15%	1.00 0.16	Limitations Bedrock (hard) < 40" depth Slopes 8 to 15%	1.00 0.16	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
731: Burchflat-----	45	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.21 0.06	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.21	Limitations Slopes > 8% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	1.00 0.21 0.06
Celeridge-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01
Loope-----	20	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
740: Jackflat-----	55	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.37	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.37	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.37
Grandridge-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
760: Thief ridge-----	45	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.94
Thief ridge-----	30	Limitations Slopes > 15% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.94
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
770: Sweetmount-----	50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Shrink-swell (LEP >6) Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
Hawkinspeak-----	20	Limitations Slopes > 15% Bedrock (hard) from 20 to 40"	1.00 0.20	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) from 20 to 40"	1.00 0.20
Hawkridge-----	15	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
780: Granhogany-----	65	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
790: Dab-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Dab-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
791: Dab-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Longday-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Thiefdrige-----	15	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Slopes > 8% Bedrock (hard) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.94
792: Dab-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Aspocket-----	25	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.27	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.27	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.27
Hawkridge-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
800: Grandridge-----	60	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Delhew-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
801: Grandridge-----	40	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Delhew-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Bullville-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.46	Limitations Slopes > 8%	1.00
810: Corbett-----	55	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 0.95	Limitations Slopes > 8%	1.00

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Toiyabe-----	20	Limitations Bedrock (soft) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.09	Limitations Slopes > 15% Bedrock (soft) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.09	Limitations Bedrock (soft) < 20" depth Slopes > 8% Fragments (>3") 25 to 50%	1.00 1.00 0.09
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
820: Freelpeak-----	50	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.30	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (soft) from 20 to 40"	1.00 0.30 0.06	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.30
Windyridge-----	25	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
830: Windyridge-----	45	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 8%	1.00 1.00
Freelpeak-----	25	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.30	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (soft) from 20 to 40"	1.00 0.30 0.06	Limitations Slopes > 8% Fragments (>3") 25 to 50%	1.00 0.30
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
840: Lavaspring-----	55	Limitations Flooding >= rare Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Trespass-----	25	Limitations Flooding >= rare Shrink-swell (LEP 3-6) Saturation from 18 to 30" depth	1.00 0.50 0.01	Limitations Flooding >= rare Saturation < 2.5' depth Shrink-swell (LEP 3-6)	1.00 0.99 0.50	Limitations Flooding >= rare Shrink-swell (LEP 3-6) Saturation from 18 to 30" depth	1.00 0.50 0.01

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Lavaspring-----	10	Limitations Flooding >= rare Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation < 18" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
850: Lunder-----	90	Limitations Pan (thick) < 20" depth Shrink-swell (LEP >6)	1.00 1.00	Limitations Shrink-swell (LEP >6) Pan (thick) < 40" depth	1.00 1.00	Limitations Pan (thick) < 20" depth Shrink-swell (LEP >6) Slopes are from 4 to 8%	1.00 1.00 0.26
851: Lunder-----	50	Limitations Pan (thick) < 20" depth Shrink-swell (LEP >6) Slopes > 15%	1.00 1.00 1.00	Limitations Shrink-swell (LEP >6) Pan (thick) < 40" depth Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 8% Pan (thick) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00
Leviathan-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
860: Hardnut-----	55	Limitations Slopes > 15% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Ocashe-----	30	Limitations Slopes > 15% Bedrock (hard) < 20" depth	1.00 1.00	Limitations Slopes > 15% Bedrock (hard) < 40" depth	1.00 1.00	Limitations Slopes > 8% Bedrock (hard) < 20" depth	1.00 1.00
870: Epvip-----	40	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Domehill-----	30	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Ashflat-----	15	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.50 0.09	Limitations Shrink-swell (LEP 3-6) Slopes 8 to 15%	0.50 0.09	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
871: Halfash-----	50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Domehill-----	35	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
872: Epvip-----	40	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Vetash-----	25	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
Epvip-----	20	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
873: Epvip-----	35	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Hardnut-----	35	Limitations Slopes > 15% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Vetash-----	15	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6)	1.00 0.50
880: Mopana-----	90	Limitations Pan (thick) < 20" depth Shrink-swell (LEP >6)	1.00 1.00	Limitations Shrink-swell (LEP >6) Pan (thick) < 40" depth	1.00 1.00	Limitations Pan (thick) < 20" depth Shrink-swell (LEP >6) Slopes are from 4 to 8%	1.00 1.00 0.02

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
890: Masonic-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.09	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 0.99 0.50	Limitations Slopes > 8% Shrink-swell (LEP 3-6) Fragments (>3") 25 to 50%	1.00 0.50 0.09
Epvip-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 8% Shrink-swell (LEP 3-6)	1.00 1.00 0.50
Domehill-----	15	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.50 0.09	Limitations Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6) Slopes 8 to 15%	1.00 0.50 0.09	Limitations Slopes > 8% Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50
900: Brokenhoe-----	60	Limitations Shrink-swell (LEP >6) Slopes > 15% Pan (thick) < 20" depth	1.00 1.00 0.99	Limitations Shrink-swell (LEP >6) Pan (thick) < 40" depth Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 8% Shrink-swell (LEP >6) Pan (thick) < 20" depth	1.00 1.00 0.99
Fisherdig-----	25	Limitations Pan (thick) < 20" depth Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.14	Limitations Shrink-swell (LEP >6) Pan (thick) < 40" depth Fragments (>3") 25 to 50%	1.00 1.00 0.14	Limitations Pan (thick) < 20" depth Shrink-swell (LEP >6) Slopes are from 4 to 8%	1.00 1.00 0.26
910: Indian Creek-----	60	Limitations Shrink-swell (LEP >6) Pan (thick) < 20" depth	1.00 0.99	Limitations Shrink-swell (LEP >6) Pan (thick) < 40" depth	1.00 1.00	Limitations Shrink-swell (LEP >6) Pan (thick) < 20" depth Slopes are from 4 to 8%	1.00 0.99 0.26
Haybourne-----	25	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00	Limitations Flooding >= rare	1.00
920: Aquic Torrifluvents----	35	Limitations Flooding >= rare Fragments (>3") >50%	1.00 1.00	Limitations Flooding >= rare Fragments (>3") >50% Saturation from 2.5' to 6' depth	1.00 1.00 0.97	Limitations Flooding >= rare Fragments (>3") >50% Slopes are from 4 to 8%	1.00 1.00 0.02
Conway-----	25	Limitations Flooding >= rare Saturation from 18 to 30" depth	1.00 0.07	Limitations Flooding >= rare Saturation < 2.5' depth	1.00 1.00	Limitations Flooding >= rare Saturation from 18 to 30" depth	1.00 0.07

TABLE 15.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without Basements		Dwellings with Basements		Small Commercial Buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
Torrifluventic Haploxerolls-----	25	Limitations		Limitations		Limitations	
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00
						Slopes are from 4 to 8%	0.02
930: Lavaspring-----	60	Limitations		Limitations		Limitations	
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
		Shrink-swell (LEP 3-6)	0.50	Saturation from 2.5' to 6' depth	0.87	Shrink-swell (LEP 3-6)	0.50
Lavaspring-----	25	Limitations		Limitations		Limitations	
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation < 18" depth	1.00
		Shrink-swell (LEP 3-6)	0.50			Shrink-swell (LEP 3-6)	0.50
960: Rose Creek-----	85	Limitations		Limitations		Limitations	
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
		Saturation from 18 to 30" depth	0.07	Saturation < 2.5' depth	1.00	Saturation from 18 to 30" depth	0.07
998: Dumps-----	60	Not rated		Not rated		Not rated	
Pits-----	30	Not rated		Not rated		Not rated	
999: Water-----	100	Not rated		Not rated		Not rated	

The interpretation for dwellings without basements evaluates the following soil properties, some at variable depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell expressed as linear extensibility percent (LEP), organic Unified classes for low soil strength (PT, OL or OH), depth to hard or soft bedrock, depth to thick or thin cemented pans, and fragments greater than 3 inches in size.

The interpretation for dwellings with basements evaluates the following soil properties, some at variable depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibility percent (LEP), organic Unified classes for low strength (PT, OL, OH), depth to hard or soft bedrock, depth to thick or thin cemented pan, and fragments greater than 3 inches in size.

The interpretation for small commercial buildings evaluates the following soil properties, some at variable depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibility percent (LEP), depth to hard or soft bedrock, depth to thick or thin cemented pan, and fragments greater than 3 inches in size.

TABLE 16.--Building Site Development (Part 2)

Pacific Southwest MLRA Office Interpretations

The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only three highest value limitations are listed. There may be more limitations.

Fine earth fractions and coarse fragments are reported on a weight basis.

A brief rating criteria summary and abbreviations are listed on the last page of this report.

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
100: Lithnnp-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Hawkinspeak-----	30	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
101: Lithnnp, moist-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	25	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
Fishsnooze-----	20	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.89 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.89
102: Lithnnp-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	25	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Fishsnooze-----	20	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.89 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.89
103: Lithnip-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Meiss-----	30	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Hawkinspeak-----	15	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
110: Jobsis-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth Caving potential is low	1.00 0.99 0.10
Whittell-----	25	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Caving potential Fragments (>3") >50% Slopes > 15%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
111: Whittell-----	45	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Caving potential Fragments (>3") >50%	1.00 1.00 1.00
Jobsis-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth Caving potential is low	1.00 0.99 0.10
Rock Outcrop-----	15	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
112: Jobsis-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth Caving potential is low	1.00 0.99 0.10
Whittell-----	25	Limitations Fragments (>3") >50% Slopes > 15%	1.00 1.00	Limitations Caving potential Fragments (>3") >50% Slopes > 15%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
113: Whittell-----	45	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Caving potential Fragments (>3") >50%	1.00 1.00 1.00
Jobsis-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Bedrock (soft) < 20" depth Caving potential is low	1.00 0.99 0.10
Rock Outcrop-----	15	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
120: Toiyabe-----	45	Limitations Slopes > 15% Bedrock (soft) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.09	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Corbett-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.95
Rock Outcrop-----	15	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
121: Toiyabe-----	45	Limitations Bedrock (soft) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.09	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Corbett-----	35	Limitations Slopes > 15%	1.00	Limitations Caving potential Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 1.00 0.95
Rock Outcrop-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
122: Toiyabe-----	50	Limitations Slopes > 15% Bedrock (soft) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.09	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Corbett-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.95
Rock Outcrop-----	15	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
130: Sofgran-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Klauspeak-----	30	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.05	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.05
Temo-----	15	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
131: Sofgran-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Temo-----	25	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Shalgran-----	20	Limitations Slopes > 15% Bedrock (soft) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.76	Limitations Bedrock (soft) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.76
132: Sofgran-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Temo-----	25	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
140: Temo-----	40	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Dagget-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential	1.00 1.00
Rock Outcrop-----	15	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
150: Mottskel-----	85	Limitations Fragments (>3") 25 to 50% Flooding = rare Slopes 8 to 15%	0.93 0.50 0.16	Limitations Caving potential Fragments (>3") 25 to 50% Slopes 8 to 15%	1.00 0.93 0.16
160: Hopeval-----	50	Limitations Saturation < 12" depth Frost action very likely Flooding >= occasional	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential Frequent or Occasional Flooding	1.00 1.00 0.50
Hopeval-----	35	Limitations Saturation < 12" depth Frost action very likely Flooding >= occasional	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential Frequent or Occasional Flooding	1.00 1.00 0.50

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
162: Corralval-----	45	Limitations Frost action possible Flooding = rare	0.50 0.50	Limitations Caving potential Saturation < 2.5' depth	1.00 0.99
Hopeval-----	45	Limitations Saturation < 12" depth Frost action very likely Flooding >= occasional	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential Frequent or Occasional Flooding	1.00 1.00 0.50
170: Burnlake-----	60	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Caving potential Slopes > 15%	1.00 1.00
Roadcat-----	25	Limitations Slopes > 15%	1.00	Limitations Caving potential Slopes > 15%	1.00 1.00
171: Stumpatil-----	65	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Caving potential Slopes > 15%	1.00 1.00
Morscour-----	20	Limitations Bedrock (soft) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
172: Stumpatil-----	85	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
173: Stumpatil-----	85	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Caving potential Slopes > 15%	1.00 1.00
174: Stumpatil-----	35	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Caving potential Slopes > 15%	1.00 1.00
Sonorapass-----	30	Limitations Slopes > 15% Bedrock (hard) < 20" depth Frost action possible	1.00 0.99 0.50	Limitations Bedrock (hard) < 40" depth Caving potential Slopes > 15%	1.00 1.00 1.00

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Snowtell-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
180: Shalgran-----	70	Limitations Slopes > 15% Bedrock (soft) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.76	Limitations Bedrock (soft) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.76
Rock Outcrop-----	15	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
190: Hopeval-----	50	Limitations Saturation < 12" depth Frost action very likely Flooding >= occasional	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential Frequent or Occasional Flooding	1.00 1.00 0.50
Hopeval-----	35	Limitations Saturation < 12" depth Frost action very likely Flooding >= occasional	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential Frequent or Occasional Flooding	1.00 1.00 0.50
200: Cavebear-----	35	Limitations Saturation from 12 to 30" depth Flooding = rare	0.75 0.50	Limitations Saturation < 2.5' depth Caving potential	1.00 1.00
Hopeval-----	25	Limitations Saturation < 12" depth Frost action very likely Flooding >= occasional	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential Frequent or Occasional Flooding	1.00 1.00 0.50
Hopeval-----	20	Limitations Saturation < 12" depth Frost action very likely Flooding >= occasional	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential Frequent or Occasional Flooding	1.00 1.00 0.50
210: Waterpeak-----	80	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.76	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.76
Rock Outcrop-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
211: Waterpeak-----	50	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.76	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.76
Buggin-----	25	Limitations Bedrock (soft) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
212: Waterpeak-----	45	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.76	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.76
Sofgran-----	25	Limitations Slopes > 15%	1.00	Limitations Caving potential Slopes > 15%	1.00 1.00
Temo-----	15	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
220: Hardtil-----	45	Limitations Bedrock (hard) < 20" depth Saturation < 12" depth Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Slopes > 15%	1.00 1.00 1.00
Alpineco-----	25	Limitations Fragments (>3") >50% Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Fragments (>3") >50% Slopes > 15% Saturation < 2.5' depth	1.00 1.00 0.99
Rock Outcrop-----	20	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
221: Hardtil-----	45	Limitations Bedrock (hard) < 20" depth Saturation < 12" depth Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15% Saturation < 2.5' depth	1.00 1.00 1.00

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Alpineco-----	25	Limitations Slopes > 15% Fragments (>3") >50% Frost action possible	1.00 1.00 0.50	Limitations Slopes > 15% Fragments (>3") >50% Saturation < 2.5' depth	1.00 1.00 0.99
Rock Outcrop-----	20	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
222: Hardtil-----	40	Limitations Bedrock (hard) < 20" depth Saturation < 12" depth Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Slopes > 15%	1.00 1.00 1.00
Alpineco-----	25	Limitations Fragments (>3") >50% Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Fragments (>3") >50% Slopes > 15% Saturation < 2.5' depth	1.00 1.00 0.99
Rock Outcrop-----	20	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
230: Hawkinspeak-----	45	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
Thiefridge-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94
Angelwhine-----	15	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
231: Hawkinspeak-----	50	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
Hawkinspeak-----	35	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
232: Hawkinspeak-----	45	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Caving potential Slopes > 15%	1.00 1.00 1.00
Hawkinspeak-----	25	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Caving potential Slopes > 15%	1.00 1.00 1.00
HawkrIDGE-----	15	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
233: Angelwhine-----	30	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
Hawkinspeak-----	30	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
HawkrIDGE-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
234: Hawkinspeak-----	40	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
Hawkinspeak-----	25	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
ThiefRIDGE-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
235:					
Hawkinspeak-----	35	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.20	Caving potential	1.00
Hawkinspeak-----	30	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.20	Caving potential	1.00
Angelwhine-----	20	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
240:					
Granylith-----	45	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Saturation < 12" depth	1.00	Saturation < 2.5' depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
Hargran-----	25	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.08	Saturation < 2.5' depth	0.99
Rock Outcrop-----	15	Not rated		Limitations	
				Slopes > 15%	1.00
				Caving potential is low	0.10
250:					
Florand-----	40	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
Lostridge-----	30	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
				Bedrock (soft) from 20 to 40"	0.54
Fishsnooze-----	15	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Fragments (>3") 25 to 50%	0.90	Slopes > 15%	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.90
260:					
Hawkridge-----	35	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Hawkinspeak-----	30	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
Hawkinspeak-----	20	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
261: Hawkridge-----	30	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Lithnip-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Hawkinspeak-----	20	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
262: Domehill-----	50	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Kiote-----	35	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
270: Duco-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Smallcone-----	30	Limitations Slopes > 15% Bedrock (soft) < 20" depth Frost action possible	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Cagle-----	15	Limitations Slopes > 15% Shrink-swell (LEP >6)	1.00 1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.64
271: Duco-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Vetagrande-----	25	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
Pinenut-----	20	Limitations Slopes > 15% Bedrock (soft) < 20" depth Frost action possible	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
280: Longcreek-----	50	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.66	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.66
Devada-----	35	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP >6)	1.00 1.00	Limitations Bedrock (hard) < 40" depth Caving potential is low	1.00 0.10
290: Pernty-----	55	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Chen-----	30	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Bedrock (hard) < 40" depth Slopes 8 to 15% Caving potential is low	1.00 0.16 0.10
310: Bagval-----	40	Limitations Shrink-swell (LEP >6) Frost action possible Flooding = rare	1.00 0.50 0.50	Limitations Caving potential Clay from 40 to 60%	1.00 0.72
Bagval-----	25	Limitations Shrink-swell (LEP >6) Frost action possible Flooding = rare	1.00 0.50 0.50	Limitations Caving potential Clay from 40 to 60% Saturation from 2.5' to 6' depth	1.00 0.72 0.53

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Wetbag-----	15	Limitations Saturation < 12" depth Frost action very likely Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential is low Clay from 40 to 60%	1.00 0.10 0.03
Wetbag-----	10	Limitations Saturation < 12" depth Frost action very likely Flooding >= occasional	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Frequent or Occasional Flooding Caving potential is low	1.00 0.50 0.10
320: Franktown-----	75	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
330: Oest-----	85	Limitations Fragments (>3") 25 to 50% Frost action possible	0.61 0.50	Limitations Fragments (>3") 25 to 50% Caving potential is low	0.61 0.10
340: Aspocket-----	55	Limitations Slopes > 15% Frost action possible Fragments (>3") 25 to 50%	1.00 0.50 0.27	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.27
Aspocket-----	30	Limitations Slopes > 15% Frost action possible Fragments (>3") 25 to 50%	1.00 0.50 0.27	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.27
350: Leroman-----	45	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Caving potential Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 1.00 0.15
Chenhigh-----	20	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP >6) Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Celeridge-----	10	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Dogbed-----	10	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
360: Monibasin-----	70	Limitations Fragments (>3") 25 to 50% Frost action possible Slopes 8 to 15%	0.82 0.50 0.09	Limitations Fragments (>3") 25 to 50% Caving potential is low Slopes 8 to 15%	0.82 0.10 0.09
Vermdig-----	15	Limitations Saturation < 12" depth Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Saturation < 2.5' depth Caving potential	1.00 1.00
370: Celeridge-----	30	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Gerdog-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Loope-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Pinew-----	10	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
380: Joecut-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Celeridge-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Joecut-----	15	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Slopes > 15% Caving potential Saturation from 2.5' to 6' depth	1.00 1.00 0.97
Gerdog-----	10	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
381: Heenlake-----	15	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.97
Loope-----	10	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Joecut-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
Joecut-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Slopes > 15% Caving potential Saturation from 2.5' to 6' depth	1.00 1.00 0.97
382: Joecut-----	55	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
Joecut-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Slopes > 15% Caving potential Saturation from 2.5' to 6' depth	1.00 1.00 0.97

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
390: Heenlake-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.97
Loope-----	30	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Chenhigh-----	15	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP >6) Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
391: Heenlake-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.97
Loope-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Dogbed-----	20	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
392: Heenlake-----	50	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Caving potential Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 1.00 0.97
Loope-----	35	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
400: Pinew-----	35	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Carshal-----	25	Limitations Slopes > 15% Bedrock (soft) < 20" depth Frost action possible	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Loope-----	15	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Celeridge-----	10	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
401: Pinew-----	75	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
410: Wolfcut-----	85	Limitations Slopes > 15% Frost action possible Flooding = rare	1.00 0.50 0.50	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.15
420: Buggin-----	75	Limitations Slopes > 15% Bedrock (soft) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.01	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	15	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
430: Newcone-----	75	Limitations Slopes > 15% Bedrock (soft) < 20" depth Frost action possible	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
440:					
Dogbed-----	35	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential	1.00
Celeridge-----	25	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Carshal-----	20	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Joecut-----	10	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Shrink-swell (LEP 3-6)	0.50	Caving potential	1.00
		Frost action possible	0.50	Saturation from 2.5' to 6' depth	0.97
450:					
Carshal-----	55	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Loope-----	20	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Rock Outcrop-----	10	Not rated		Limitations	
				Slopes > 15%	1.00
				Caving potential is low	0.10
460:					
Toejom-----	45	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
Pimogran-----	30	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
Rock Outcrop-----	10	Not rated		Limitations	
				Slopes > 15%	1.00
				Caving potential is low	0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
461: Toejom-----	40	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Pimogran-----	35	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
462: Toejom-----	40	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Glenbrook-----	30	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Pimogran-----	20	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
470: Sumeadow-----	55	Limitations Slopes > 15% Frost action possible Fragments (>3") 25 to 50%	1.00 0.50 0.13	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.13
Lostridge-----	30	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.54
471: Sumeadow-----	55	Limitations Slopes > 15% Frost action possible Fragments (>3") 25 to 50%	 1.00 0.50 0.13	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	 1.00 1.00 0.13

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Sumeadow-----	30	Limitations Frost action possible Fragments (>3") 25 to 50% Slopes 8 to 15%	0.50 0.13 0.09	Limitations Caving potential Fragments (>3") 25 to 50% Slopes 8 to 15%	1.00 0.13 0.09
480: Aspetill-----	60	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.59 0.50	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.59
Aspetill-----	25	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.59 0.50	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.59
481: Aspetill-----	50	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.59 0.50	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.59
Aspetill-----	35	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.85 0.50	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.85
490: Cloudburst-----	50	Limitations Fragments (>3") >50% Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Fragments (>3") >50% Slopes > 15% Caving potential is low	1.00 1.00 0.10
Murain-----	35	Limitations Fragments (>3") >50% Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Fragments (>3") >50% Slopes > 15% Caving potential is low	1.00 1.00 0.10
491: Cloudburst-----	45	Limitations Slopes > 15% Fragments (>3") >50% Frost action possible	1.00 1.00 0.50	Limitations Slopes > 15% Fragments (>3") >50% Caving potential is low	1.00 1.00 0.10
Murain-----	25	Limitations Slopes > 15% Fragments (>3") >50% Frost action possible	1.00 1.00 0.50	Limitations Slopes > 15% Fragments (>3") >50% Caving potential is low	1.00 1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Hardtil-----	15	Limitations Bedrock (hard) < 20" depth Saturation < 12" depth Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Saturation < 2.5' depth Slopes > 15%	1.00 1.00 1.00
500: Chrisflat-----	90	Limitations Shrink-swell (LEP 3-6) Frost action possible Fragments (>3") 25 to 50%	0.50 0.50 0.09	Limitations Caving potential Fragments (>3") 25 to 50% Slopes 8 to 15%	1.00 0.09 0.09
510: Rubble Land-----	40	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
Lithnip-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	15	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
Fishsnooze-----	10	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.90 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.90
511: Rock Outcrop-----	40	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
Snowtell-----	30	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Forsell-----	15	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.73 0.50	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.73
512: Rock Outcrop-----	50	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Snowtell-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
513: Rubble Land-----	40	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
Holdon-----	30	Limitations Slopes > 15% Fragments (>3") >50% Frost action possible	1.00 1.00 0.50	Limitations Slopes > 15% Caving potential Fragments (>3") >50%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
520: Canfire-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Crispy-----	35	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
530: Elaero-----	35	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential Bedrock (soft) < 20" depth	1.00 1.00 0.99
Lockgate-----	25	Limitations Slopes > 15% Frost action possible Fragments (>3") 25 to 50%	1.00 0.50 0.01	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.01
Granhogany-----	15	Limitations Slopes > 15% Bedrock (soft) < 20" depth Frost action possible	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Granidry-----	10	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
531: Elaero-----	55	Limitations Frost action possible Slopes 8 to 15%	0.50 0.09	Limitations Caving potential Bedrock (soft) < 20" depth Slopes 8 to 15%	1.00 0.99 0.09
Elaero-----	30	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential Bedrock (soft) < 20" depth	1.00 1.00 0.99
532: Elaero-----	55	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential Bedrock (soft) < 20" depth	1.00 1.00 0.99
Granidry-----	20	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
540: Lostcannon, moist-----	45	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Caving potential Slopes > 15%	1.00 1.00
Lostcannon-----	40	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Caving potential Slopes > 15%	1.00 1.00
560: Dunderberg-----	30	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.88 0.50	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.88
Dunderberg, warm-----	25	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.88 0.50	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.88

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Conwayridge-----	20	Limitations Fragments (>3") >50% Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Fragments (>3") >50% Slopes > 15% Caving potential is low	1.00 1.00 0.10
Dunderberg, moist-----	10	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.88 0.50	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.88
561: Dunderberg-----	40	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.88 0.50	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.88
Dunderberg, warm-----	30	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.88 0.50	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.88
Dunderberg, moist-----	15	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.88 0.50	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.88
570: Angelwhine-----	35	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
Hawkinspeak-----	25	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
Hawkridge-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
580: Murnain-----	50	Limitations Fragments (>3") >50% Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Fragments (>3") >50% Slopes > 15% Caving potential is low	1.00 1.00 0.10
Shorthike-----	20	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Murain, moist-----	15	Limitations Slopes > 15% Fragments (>3") >50% Frost action possible	1.00 1.00 0.50	Limitations Slopes > 15% Fragments (>3") >50% Caving potential is low	1.00 1.00 0.10
581: Murain-----	45	Limitations Fragments (>3") >50% Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Fragments (>3") >50% Slopes > 15% Caving potential is low	1.00 1.00 0.10
Murain-----	40	Limitations Fragments (>3") >50% Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Fragments (>3") >50% Slopes > 15% Caving potential is low	1.00 1.00 0.10
590: Loope-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Heenlake-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.97
Carshal-----	15	Limitations Slopes > 15% Bedrock (soft) < 20" depth Frost action possible	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
591: Loope-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Heenlake-----	30	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Caving potential Slopes > 15% Bedrock (soft) from 20 to 40"	1.00 1.00 0.97
Celeridge-----	15	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
592:					
Loope-----	30	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Pinew-----	30	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
Heenlake-----	25	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Shrink-swell (LEP 3-6)	0.50	Caving potential	1.00
		Frost action possible	0.50	Bedrock (soft) from 20 to 40"	0.97
600:					
Snowtell-----	45	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Sonorapass-----	25	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	0.99	Caving potential	1.00
		Frost action possible	0.50	Slopes > 15%	1.00
Rock Outcrop-----	15	Not rated		Limitations	
				Slopes > 15%	1.00
				Caving potential is low	0.10
610:					
Forsell-----	50	Limitations		Limitations	
		Slopes > 15%	1.00	Caving potential	1.00
		Fragments (>3") 25 to 50%	0.73	Slopes > 15%	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.73
Snowtell-----	25	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Frost action possible	0.50	Caving potential is low	0.10
Rock Outcrop-----	10	Not rated		Limitations	
				Slopes > 15%	1.00
				Caving potential is low	0.10
611:					
Forsell-----	50	Limitations		Limitations	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.73	Caving potential	1.00
		Frost action possible	0.50	Fragments (>3") 25 to 50%	0.73

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Snowtell-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
620: Indian Creek-----	90	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6)	1.00 1.00	Limitations Caving potential Pan (thin) < 20" depth Clay from 40 to 60%	1.00 0.99 0.12
630: Olac-----	40	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Flex-----	25	Limitations Slopes > 15% Bedrock (soft) < 20" depth Frost action possible	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Duco-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
640: Koontz-----	55	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Nosrac-----	30	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
650: Shree-----	90	Limitations Shrink-swell (LEP 3-6) Frost action possible Flooding = rare	0.50 0.50 0.50	Limitations Caving potential Slopes 8 to 15%	1.00 0.16

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
651: Shree-----	50	Limitations Shrink-swell (LEP 3-6) Frost action possible Flooding = rare	0.50 0.50 0.50	Limitations Caving potential	1.00
Holbrook-----	35	Limitations Frost action possible Flooding = rare Fragments (>3") 25 to 50%	0.50 0.50 0.12	Limitations Caving potential Fragments (>3") 25 to 50%	1.00 0.12
660: Delhew-----	35	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
Grandridge-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Bakscratch-----	20	Limitations Slopes > 15% Bedrock (soft) < 20" depth Frost action possible	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
670: Springmeyer-----	85	Limitations Shrink-swell (LEP 3-6) Frost action possible	0.50 0.50	Limitations Caving potential	1.00
671: Springmeyer-----	50	Limitations Shrink-swell (LEP 3-6) Frost action possible	0.50 0.50	Limitations Caving potential	1.00
Cassiro-----	35	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Caving potential Clay from 40 to 60%	1.00 0.03
680: Rolldown-----	40	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Caving potential Slopes > 15%	1.00 1.00
Mountpatterson-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Rubble Land-----	20	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
700: Coldtree-----	75	Limitations Slopes > 15% Fragments (>3") 25 to 50% Frost action possible	1.00 0.83 0.50	Limitations Slopes > 15% Caving potential Bedrock (hard) from 40 to 60"	1.00 1.00 0.88
Rubble Land-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
710: Bakscratch-----	45	Limitations Slopes > 15% Bedrock (soft) < 20" depth Frost action possible	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Grandridge-----	25	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
McTom-----	15	Limitations Slopes > 15% Fragments (>3") >50%	1.00 1.00	Limitations Slopes > 15% Caving potential Fragments (>3") >50%	1.00 1.00 1.00
720: Nohelp-----	55	Limitations Shrink-swell (LEP >6) Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.01
Joenchris-----	35	Limitations Shrink-swell (LEP >6) Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Slopes > 15% Clay from 40 to 60% Caving potential is low	1.00 0.12 0.10
730: Burchflat-----	55	Limitations Slopes > 15% Frost action possible Fragments (>3") 25 to 50%	1.00 0.50 0.21	Limitations Bedrock (hard) < 40" depth Caving potential Slopes > 15%	1.00 1.00 1.00
Loope-----	30	Limitations Bedrock (hard) < 20" depth Frost action possible Slopes 8 to 15%	1.00 0.50 0.16	Limitations Bedrock (hard) < 40" depth Slopes 8 to 15% Caving potential is low	1.00 0.16 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
731: Burchflat-----	45	Limitations Slopes > 15% Frost action possible Fragments (>3") 25 to 50%	1.00 0.50 0.21	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
Celeridge-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Loope-----	20	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
740: Jackflat-----	55	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Slopes > 15% Fragments (>3") 25 to 50% Caving potential is low	1.00 0.37 0.10
Grandridge-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
760: Thiefridge-----	45	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94
Thiefridge-----	30	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94
Rock Outcrop-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
770: Sweetmount-----	50	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Caving potential Slopes > 15% Clay from 40 to 60%	1.00 1.00 0.03

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Hawkinspeak-----	20	Limitations Slopes > 15% Frost action possible Bedrock (hard) from 20 to 40"	1.00 0.50 0.20	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential	1.00 1.00 1.00
Hawkridge-----	15	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
780: Granhogany-----	65	Limitations Slopes > 15% Bedrock (soft) < 20" depth Frost action possible	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	20	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
790: Dab-----	50	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
Dab-----	35	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
791: Dab-----	45	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
Longday-----	25	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
Thiefridge-----	15	Limitations Bedrock (hard) < 20" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94	Limitations Bedrock (hard) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.94
792: Dab-----	35	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Aspocket-----	25	Limitations Slopes > 15% Frost action possible Fragments (>3") 25 to 50%	1.00 0.50 0.27	Limitations Caving potential Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.27
Hawkridge-----	25	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
800: Grandridge-----	60	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Delhew-----	30	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
801: Grandridge-----	40	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Delhew-----	25	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
Bullville-----	20	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.46
810: Corbett-----	55	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) from 20 to 40"	1.00 1.00 0.95
Toiyabe-----	20	Limitations Slopes > 15% Bedrock (soft) < 20" depth Fragments (>3") 25 to 50%	1.00 1.00 0.09	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
820: Freelpeak-----	50	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.30	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.30
Windyridge-----	25	Limitations Slopes > 15% Bedrock (soft) < 20" depth	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Rock Outcrop-----	10	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
830: Windyridge-----	45	Limitations Bedrock (soft) < 20" depth Slopes > 15%	1.00 1.00	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Freelpeak-----	25	Limitations Slopes > 15% Fragments (>3") 25 to 50%	1.00 0.30	Limitations Slopes > 15% Caving potential Fragments (>3") 25 to 50%	1.00 1.00 0.30
Rock Outcrop-----	15	Not rated		Limitations Slopes > 15% Caving potential is low	1.00 0.10
840: Lavaspring-----	55	Limitations Saturation < 12" depth Frost action very likely Flooding >= occasional	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential Frequent or Occasional Flooding	1.00 1.00 0.50
Trespass-----	25	Limitations Shrink-swell (LEP 3-6) Frost action possible Flooding = rare	0.50 0.50 0.50	Limitations Caving potential Saturation < 2.5' depth	1.00 0.99
Lavaspring-----	10	Limitations Saturation < 12" depth Frost action very likely Flooding >= occasional	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential Frequent or Occasional Flooding	1.00 1.00 0.50
850: Lunder-----	90	Limitations AASHTO GI >8 (low soil strength) Pan (thick) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Pan (thick) < 40" depth Caving potential is low	1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
851:					
Lunder-----	50	Limitations AASHTO GI >8 (low soil strength) Pan (thick) < 20" depth Shrink-swell (LEP >6)	1.00 1.00 1.00	Limitations Pan (thick) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Leviathan-----	35	Limitations Slopes > 15% Frost action possible	1.00 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
860:					
Hardnut-----	55	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Ocashe-----	30	Limitations Bedrock (hard) < 20" depth Slopes > 15% Frost action possible	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
870:					
Epvip-----	40	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Domehill-----	30	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Ashflat-----	15	Limitations Shrink-swell (LEP 3-6) Frost action possible Slopes 8 to 15%	0.50 0.50 0.09	Limitations Caving potential Slopes 8 to 15%	1.00 0.09
871:					
Halfash-----	50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Domehill-----	35	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
872:					
Epvip-----	40	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Vetash-----	25	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
Epvip-----	20	Limitations Slopes > 15% Bedrock (soft) < 20" depth Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
873:					
Epvip-----	35	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Hardnut-----	35	Limitations Bedrock (hard) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10
Vetash-----	15	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Slopes > 15% Caving potential	1.00 1.00
880:					
Mopana-----	90	Limitations Pan (thick) < 20" depth Shrink-swell (LEP >6) AASHTO GI >8 (low soil strength)	1.00 1.00 1.00	Limitations Pan (thick) < 40" depth Caving potential is low	1.00 0.10
890:					
Masonic-----	40	Limitations Slopes > 15% Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Slopes > 15% Bedrock (soft) < 20" depth Caving potential is low	1.00 0.99 0.10
Epvip-----	30	Limitations Bedrock (soft) < 20" depth Slopes > 15% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Bedrock (soft) < 20" depth Slopes > 15% Caving potential is low	1.00 1.00 0.10

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
Domehill-----	15	Limitations Bedrock (hard) < 20" depth Shrink-swell (LEP 3-6) Frost action possible	1.00 0.50 0.50	Limitations Bedrock (hard) < 40" depth Caving potential is low Slopes 8 to 15%	1.00 0.10 0.09
900: Brokenhoe-----	60	Limitations Shrink-swell (LEP >6) Slopes > 15% Pan (thick) < 20" depth	1.00 1.00 0.99	Limitations Pan (thick) < 40" depth Slopes > 15% Fragments (>3") 25 to 50%	1.00 1.00 0.87
Fisherdig-----	25	Limitations Pan (thick) < 20" depth Shrink-swell (LEP >6) Fragments (>3") 25 to 50%	1.00 1.00 0.14	Limitations Pan (thick) < 40" depth Fragments (>3") 25 to 50% Caving potential is low	1.00 0.14 0.10
910: Indian Creek-----	60	Limitations AASHTO GI >8 (low soil strength) Shrink-swell (LEP >6) Pan (thick) < 20" depth	1.00 1.00 0.99	Limitations Pan (thick) < 40" depth Caving potential Clay from 40 to 60%	1.00 1.00 0.12
Haybourne-----	25	Limitations Frost action possible Flooding = rare	0.50 0.50	Limitations Caving potential	1.00
920: Aquic Torrifluvents-----	35	Limitations Fragments (>3") >50% Flooding = rare	1.00 0.50	Limitations Fragments (>3") >50% Caving potential Saturation from 2.5' to 6' depth	1.00 1.00 0.97
Conway-----	25	Limitations Frost action very likely Flooding >= occasional Saturation from 12 to 30" depth	1.00 1.00 0.03	Limitations Saturation < 2.5' depth Caving potential Frequent or Occasional Flooding	1.00 1.00 0.50
Torrifluventic Haploxerolls-----	25	Limitations Fragments (>3") >50% Flooding = rare	1.00 0.50	Limitations Caving potential Fragments (>3") >50%	1.00 1.00
930: Lavaspring-----	60	Limitations Frost action very likely Flooding >= occasional Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Caving potential Saturation from 2.5' to 6' depth Frequent or Occasional Flooding	1.00 0.87 0.50
Lavaspring-----	25	Limitations Saturation < 12" depth Frost action very likely Flooding >= occasional	1.00 1.00 1.00	Limitations Saturation < 2.5' depth Caving potential Frequent or Occasional Flooding	1.00 1.00 0.50

TABLE 16.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
960: Rose Creek-----	85	Limitations Frost action very likely Flooding >= occasional Saturation from 12 to 30" depth	 1.00 1.00 0.03	Limitations Saturation < 2.5' depth Caving potential Frequent or Occasional Flooding	 1.00 1.00 0.50
998: Dumps-----	60	Not rated		Not rated	
Pits-----	30	Not rated		Not rated	
999: Water-----	100	Not rated		Not rated	

The interpretation for local roads and streets evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, organic Unified classes for low soil strength (PT, OL or OH), amount of clay, depth to hard or soft bedrock, depth to thick or thin cemented pans, fragments greater than 3 inches in size, soil bulk density and the potential of the soil to cave.

The interpretation for shallow excavation evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibility percent (LEP), potential frost action, depth to hard or soft bedrock, depth to thick or thin cemented pan, fragments greater than 3 inches in size and soil strength expressed as the AASHTO group index number (AASHTO GI).

TABLE 17.--Sanitary Facilities (Part 1)

Pacific Southwest MLRA Office Interpretations

The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only three highest value limitations are listed. There may be more limitations.

Fine earth fractions and coarse fragments are reported on a weight basis.

A brief rating criteria summary and abbreviations are listed on the last page of this report.

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
100: Lithnip-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Hawkinspeak-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
101: Lithnip, moist-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Fishsnooze-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
102: Lithnip-----	40	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Fishsnooze-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
103: Lithnip-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Meiss-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Hawkinspeak-----	15	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
110: Jobsis-----	45	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Whittell-----	25	Limitations Depth to bedrock < 40" Permeability > 6"/hr in 24-60" (seepage and poor filter) Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
111: Whittell-----	45	Limitations Depth to bedrock < 40" Permeability > 6"/hr in 24-60" (seepage and poor filter) Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Jobsis-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
112: Jobsis-----	45	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Whittell-----	25	Limitations Depth to bedrock < 40" Permeability > 6"/hr in 24-60" (seepage and poor filter) Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
113: Whittell-----	45	Limitations Depth to bedrock < 40" Permeability > 6"/hr in 24-60" (seepage and poor filter) Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Jobsis-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
120: Toiyabe-----	45	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Corbett-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
121: Toiyabe-----	45	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Corbett-----	35	Limitations Depth to bedrock < 40" Seepage in bottom layer Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
122: Toiyabe-----	50	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Corbett-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
130: Sofgran-----	40	Limitations Slopes > 15% Seepage in bottom layer Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00 1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Klauspeak-----	30	Limitations Slopes > 15% Seepage in bottom layer Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00 1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Temo-----	15	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
131: Sofgran-----	40	Limitations Slopes > 15% Seepage in bottom layer Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00 1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
Temo-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Shalgran-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
132: Sofgran-----	50	Limitations Slopes > 15% Seepage in bottom layer Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00 1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Temo-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
140: Temo-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Dagget-----	30	Limitations Permeability > 6"/hr in 24-60" (seepage and poor filter) Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 1.00 0.99
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
150: Mottskel-----	85	Limitations Permeability > 6"/hr in 24-60" (seepage and poor filter) Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.93	Limitations Permeability > 2"/hr (seepage) Slopes > 8% Fragments (>3") > 35%	1.00 1.00 1.00
160: Hopeval-----	50	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Flooding >= occasional Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.50
Hopeval-----	35	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Flooding >= occasional Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.50
162: Corralval-----	45	Limitations Saturation < 4' depth Seepage in bottom layer Rare flooding	1.00 1.00 0.40	Limitations Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth Flooding = rare	1.00 0.50 0.50

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
Hopeval-----	45	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Flooding >= occasional Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.50
170: Burnlake-----	60	Limitations Seepage in bottom layer Slopes > 15%	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Roadcat-----	25	Limitations Seepage in bottom layer Permeability > 6"/hr in 24-60" (seepage and poor filter) Slopes > 15%	1.00 1.00 1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.04
171: Stumpatil-----	65	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.50	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") 20-35%	1.00 1.00 0.02
Morscour-----	20	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
172: Stumpatil-----	85	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.50	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") 20-35%	1.00 1.00 0.02
173: Stumpatil-----	85	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.50	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") 20-35%	1.00 1.00 0.02
174: Stumpatil-----	35	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.50	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") 20-35%	1.00 1.00 0.02
Sonorapass-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Snowtell-----	20	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
180: Shalgran-----	70	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
190: Hopeval-----	50	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Flooding >= occasional Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.50
Hopeval-----	35	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Flooding >= occasional Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.50
200: Cavebear-----	35	Limitations Saturation < 4' depth Permeability > 6"/hr in 24-60" (seepage and poor filter) Seepage in bottom layer	1.00 1.00 1.00	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 8% Flooding = rare	1.00 0.50 0.50
Hopeval-----	25	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Flooding >= occasional Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.50
Hopeval-----	20	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Flooding >= occasional Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.50
210: Waterpeak-----	80	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.76	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
211: Waterpeak-----	50	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.76	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
Buggin-----	25	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
212: Waterpeak-----	45	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.76	Limitations Permeability > 2"/hr (seepage) Fragments (>3") > 35% Slopes > 8%	1.00 1.00 1.00
Sofgran-----	25	Limitations Seepage in bottom layer Slopes > 15% Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00 1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
Temo-----	15	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
220: Hardtil-----	45	Limitations Depth to bedrock < 40" Saturation < 4' depth Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Alpineco-----	25	Limitations Saturation < 4' depth Fragments (>3") >50% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
Rock Outcrop-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
221: Hardtil-----	45	Limitations Depth to bedrock < 40" Saturation < 4' depth Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Alpineco-----	25	Limitations Saturation < 4' depth Slopes > 15% Fragments (>3") >50%	1.00 1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
Rock Outcrop-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
222: Hardtil-----	40	Limitations Depth to bedrock < 40" Saturation < 4' depth Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Alpineco-----	25	Limitations Saturation < 4' depth Fragments (>3") >50% Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
Rock Outcrop-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
230: Hawkinspeak-----	45	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Thief ridge-----	25	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Angelwhine-----	15	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.50	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
231: Hawkinspeak-----	50	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Hawkinspeak-----	35	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
232: Hawkinspeak-----	45	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Hawkinspeak-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Hawkridge-----	15	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
233: Angelwhine-----	30	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.50	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Hawkinspeak-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Hawkridge-----	25	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
234: Hawkinspeak-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Hawkinspeak-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Thief ridge-----	20	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
235: Hawkinspeak-----	35	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Hawkinspeak-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Angelwhine-----	20	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.50	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
240: Granylith-----	45	Limitations Depth to bedrock < 40" Saturation < 4' depth Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Hargran-----	25	Limitations Depth to bedrock < 40" Saturation < 4' depth Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
250: Florand-----	40	Limitations Slopes > 15% Seepage in bottom layer Depth to bedrock 40 - 72"	1.00 1.00 0.89	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 1.00 0.71
Lostridge-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Fishsnooze-----	15	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
260: Hawkridge-----	35	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Hawkinspeak-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Hawkinspeak-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
261: Hawkridge-----	30	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Lithnip-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Hawkinspeak-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
262: Domehill-----	50	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Kiote-----	35	Limitations Slopes > 15% Seepage in bottom layer Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
270: Duco-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.38
Smallcone-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Cagle-----	15	Limitations Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
271: Duco-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.38
Vetagrande-----	25	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.01	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
Pinenut-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
280: Longcreek-----	50	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.63
Devada-----	35	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan	1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes 2 to 8%	1.00 0.33
290: Pernty-----	55	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Chen-----	30	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes 8 to 15%	1.00 1.00 0.16	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
310: Bagval-----	40	Limitations Permeability < .6"/hr in 24-60" (slow perc) Rare flooding	1.00 0.40	Limitations Flooding = rare Slopes 2 to 8%	0.50 0.33
Bagval-----	25	Limitations Permeability < .6"/hr in 24-60" (slow perc) Saturation from 4 to 6' depth Rare flooding	1.00 0.97 0.40	Limitations Saturation from 3.5 to 5' depth Flooding = rare Slopes 2 to 8%	0.52 0.50 0.33
Wetbag-----	15	Limitations Permeability < .6"/hr in 24-60" (slow perc) Saturation < 4' depth Rare flooding	1.00 1.00 0.40	Limitations Saturation at < 3.5' depth Flooding = rare Slopes 2 to 8%	1.00 0.50 0.33
Wetbag-----	10	Limitations Flooding Permeability < .6"/hr in 24-60" (slow perc) Saturation < 4' depth	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Flooding >= occasional Slopes 2 to 8%	1.00 1.00 0.33
320: Franktown-----	75	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
330: Oest-----	85	Limitations Fragments (>3") 25 to 50% Permeability ranges .6 - 2"/hr (slow perc)	0.61 0.50	Limitations Fragments (>3") > 35% Slopes 2 to 8% Permeability .6-2"/hr (some seepage)	1.00 0.50 0.50

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
340: Aspocket-----	55	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.59	Limitations Permeability > 2"/hr (seepage) Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.24
Aspocket-----	30	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.59	Limitations Permeability > 2"/hr (seepage) Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.24
350: Leroman-----	45	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Chenhigh-----	20	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Celeridge-----	10	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Dogbed-----	10	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc) Depth to bedrock 40 - 72"	1.00 0.50 0.01	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
360: Monibasin-----	70	Limitations Fragments (>3") 25 to 50% Permeability ranges .6 - 2"/hr (slow perc) Slopes 8 to 15%	0.82 0.50 0.09	Limitations Permeability > 2"/hr (seepage) Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.27
Vermdig-----	15	Limitations Saturation < 4' depth Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Saturation at < 3.5' depth Slopes 2 to 8% Permeability .6-2"/hr (some seepage)	1.00 0.50 0.50
370: Celeridge-----	30	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Gerdog-----	25	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Loope-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
Pinew-----	10	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
380: Joecut-----	40	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.01	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Celeridge-----	20	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Joecut-----	15	Limitations Saturation < 4' depth Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Gerdog-----	10	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
381: Heenlake-----	15	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.93
Loope-----	10	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Joecut-----	30	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.01	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Joecut-----	30	Limitations Saturation < 4' depth Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
382: Joecut-----	55	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.01	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Joecut-----	30	Limitations Saturation < 4' depth Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
390: Heenlake-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.90
Loope-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Chenhigh-----	15	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
391: Heenlake-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.93
Loope-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Dogbed-----	20	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc) Depth to bedrock 40 - 72"	1.00 0.50 0.01	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
392: Heenlake-----	50	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.93
Loope-----	35	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
400: Pinew-----	35	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Carshal-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Loope-----	15	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
Celeridge-----	10	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
401: Pinew-----	75	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
410: Wolfcut-----	85	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc) Rare flooding	1.00 0.50 0.40	Limitations Slopes > 8% Fragments (>3") 20-35% Permeability .6-2"/hr (some seepage)	1.00 0.99 0.50
420: Buggin-----	75	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
430: Newcone-----	75	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
440: Dogbed-----	35	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc) Depth to bedrock 40 - 72"	1.00 0.50 0.01	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Celeridge-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Carshal-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Joecut-----	10	Limitations Saturation < 4' depth Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Saturation at < 3.5' depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
450: Carshal-----	55	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Loope-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
460: Toejom-----	45	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Pimogran-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
461: Toejom-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Pimogran-----	35	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
462: Toejom-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Glenbrook-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Pimogran-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
470: Sumeadow-----	55	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.13	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") 20-35%	1.00 1.00 0.55
Lostridge-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
471: Sumeadow-----	55	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.13	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") 20-35%	1.00 1.00 0.55
Sumeadow-----	30	Limitations Seepage in bottom layer Fragments (>3") 25 to 50% Slopes 8 to 15%	1.00 0.13 0.09	Limitations Permeability > 2"/hr (seepage) Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.55
480: Aspetill-----	60	Limitations Slopes > 15% Fragments (>3") 25 to 50% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.59 0.50	Limitations Slopes > 8% Fragments (>3") > 35% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Aspetill-----	25	Limitations Slopes > 15% Fragments (>3") 25 to 50% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.59 0.50	Limitations Slopes > 8% Fragments (>3") > 35% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
481: Aspetill-----	50	Limitations Slopes > 15% Fragments (>3") 25 to 50% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.59 0.50	Limitations Slopes > 8% Fragments (>3") > 35% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Aspetill-----	35	Limitations Slopes > 15% Fragments (>3") 25 to 50% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.85 0.50	Limitations Fragments (>3") > 35% Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
490: Cloudburst-----	50	Limitations Fragments (>3") >50% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 8% Fragments (>3") > 35% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Murain-----	35	Limitations Fragments (>3") >50% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 8% Fragments (>3") > 35% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
491: Cloudburst-----	45	Limitations Slopes > 15% Fragments (>3") >50% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 8% Fragments (>3") > 35% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Murain-----	25	Limitations Slopes > 15% Fragments (>3") >50% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 8% Fragments (>3") > 35% Permeability > 2"/hr (seepage)	1.00 1.00 1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
Hardtil-----	15	Limitations Depth to bedrock < 40" Saturation < 4' depth Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
500: Chrisflat-----	90	Limitations Seepage in bottom layer Permeability ranges .6 - 2"/hr (slow perc) Very rare flooding	1.00 0.50 0.20	Limitations Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00
510: Rubble Land-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Lithnip-----	20	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Fishsnooze-----	10	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
511: Rock Outcrop-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Snowtell-----	30	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Forsell-----	15	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.73	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
512: Rock Outcrop-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Snowtell-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
513: Rubble Land-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
Holdon-----	30	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") >50%	1.00 1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") 20-35%	1.00 1.00 0.90
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
520: Canfire-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Crispy-----	35	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
530: Elaero-----	35	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Lockgate-----	25	Limitations Slopes > 15% Seepage in bottom layer Depth to bedrock 40 - 72"	1.00 1.00 0.99	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Bedrock (soft) from 40 to 60"	1.00 1.00 0.96
Granhogany-----	15	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Granidry-----	10	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
531: Elaero-----	55	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00 1.00
Elaero-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
532: Elaero-----	55	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Granidry-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
540: Lostcannon, moist-----	45	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Lostcannon-----	40	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
560: Dunderberg-----	30	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.88	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
Dunderberg, warm-----	25	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.88	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
Conwayridge-----	20	Limitations Fragments (>3") >50% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
Dunderberg, moist-----	10	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.88	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
561: Dunderberg-----	40	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.88	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
Dunderberg, warm-----	30	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.88	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
Dunderberg, moist-----	15	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.88	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
570: Angelwhine-----	35	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.50	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Hawkinspeak-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Hawkridge-----	25	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
580: Murain-----	50	Limitations Fragments (>3") >50% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Fragments (>3") > 35% Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00 1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
Shorthike-----	20	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Murain, moist-----	15	Limitations Slopes > 15% Fragments (>3") >50% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 8% Fragments (>3") > 35% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
581: Murain-----	45	Limitations Fragments (>3") >50% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Fragments (>3") > 35% Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00 1.00
Murain-----	40	Limitations Fragments (>3") >50% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 8% Fragments (>3") > 35% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
590: Loope-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Heenlake-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.93
Carshal-----	15	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
591: Loope-----	40	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Heenlake-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.93
Celeridge-----	15	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
592: Loope-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
Pinew-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Heenlake-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.93
600: Snowtell-----	45	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Sonorapass-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
610: Forsell-----	50	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.73	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
Snowtell-----	25	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
611: Forsell-----	50	Limitations Slopes > 15% Seepage in bottom layer Fragments (>3") 25 to 50%	1.00 1.00 0.73	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") > 35%	1.00 1.00 1.00
Snowtell-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
620: Indian Creek-----	90	Limitations Depth to pan < 40" Restricted permeability due to bedrock or hardpan Seepage in bottom layer	1.00 1.00 1.00	Limitations Depth to pan < 40" Permeability > 2"/hr (seepage) Slopes 2 to 8%	1.00 1.00 0.50

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
630: Olac-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Flex-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Duco-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Fragments (>3") 20-35%	1.00 1.00 0.11
640: Koontz-----	55	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Nosrac-----	30	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc) Depth to bedrock 40 - 72"	1.00 1.00 0.01	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
650: Shree-----	90	Limitations Permeability < .6"/hr in 24-60" (slow perc) Seepage in bottom layer Rare flooding	1.00 1.00 0.40	Limitations Permeability > 2"/hr (seepage) Slopes > 8% Flooding = rare	1.00 1.00 0.50
651: Shree-----	50	Limitations Permeability < .6"/hr in 24-60" (slow perc) Seepage in bottom layer Rare flooding	1.00 1.00 0.40	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 8% Flooding = rare	1.00 0.50 0.50
Holbrook-----	35	Limitations Seepage in bottom layer Rare flooding Fragments (>3") 25 to 50%	1.00 0.40 0.12	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 8% Flooding = rare	1.00 0.50 0.50
660: Delhew-----	35	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Grandridge-----	30	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Bakscratch-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
670: Springmeyer-----	85	Limitations Permeability < .6"/hr in 24-60" (slow perc)	1.00	Limitations Slopes 2 to 8%	0.67
				Permeability .6-2"/hr (some seepage)	0.50
671: Springmeyer-----	50	Limitations Permeability ranges .6 - 2"/hr (slow perc)	0.50	Limitations Slopes 2 to 8%	0.50
				Permeability .6-2"/hr (some seepage)	0.50
Cassiro-----	35	Limitations Permeability < .6"/hr in 24-60" (slow perc)	1.00	Limitations Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock 40 - 72"	0.94	Bedrock (soft) from 40 to 60"	0.84
				Slopes 2 to 8%	0.50
680: Rolldown-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
		Permeability ranges .6 - 2"/hr (slow perc)	0.50	Permeability .6-2"/hr (some seepage)	0.50
Mountpatterson-----	25	Limitations Depth to bedrock < 40"	1.00	Limitations Bedrock (hard) < 40" depth	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Fragments (>3") 20-35%	0.51
Rubble Land-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
700: Coldtree-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
		Seepage in bottom layer	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock 40 - 72"	0.96	Bedrock (hard) from 40 to 60"	0.88
Rubble Land-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
710: Bakscratch-----	45	Limitations Depth to bedrock < 40"	1.00	Limitations Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/hr (seepage)	1.00
Grandridge-----	25	Limitations Depth to bedrock < 40"	1.00	Limitations Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/hr (some seepage)	0.50
McTom-----	15	Limitations Depth to bedrock < 40"	1.00	Limitations Bedrock (soft) < 40" depth	1.00
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Fragments (>3") > 35%	1.00
720: Nohelp-----	55	Limitations Permeability < .6"/hr in 24-60" (slow perc)	1.00	Limitations Slopes > 8%	1.00
		Slopes > 15%	1.00	Fragments (>3") 20-35%	0.01
		Fragments (>3") 25 to 50%	0.01		

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
Joenchris-----	35	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15%	1.00 1.00	Limitations Slopes > 8%	1.00
730: Burchflat-----	55	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Permeability > 2"/hr (seepage) Slopes > 8%	1.00 1.00 1.00
Loope-----	30	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes 8 to 15%	1.00 1.00 0.16	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
731: Burchflat-----	45	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Celeridge-----	20	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Loope-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
740: Jackflat-----	55	Limitations Slopes > 15% Depth to bedrock 40 - 72" Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.94 0.50	Limitations Slopes > 8% Bedrock (soft) from 40 to 60" Permeability .6-2"/hr (some seepage)	1.00 0.84 0.50
Grandridge-----	30	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
760: Thiefridge-----	45	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Thiefridge-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
770: Sweetmount-----	50	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.52	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage) Fragments (>3") 20-35%	1.00 0.50 0.09
Hawkinspeak-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Hawkridge-----	15	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
780: Granhogany-----	65	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
790: Dab-----	50	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.50	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
Dab-----	35	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.50	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
791: Dab-----	45	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.50	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
Longday-----	25	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc) Depth to bedrock 40 - 72"	1.00 0.50 0.01	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
Thiefridge-----	15	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
792: Dab-----	35	Limitations Slopes > 15% Permeability ranges .6 - 2"/hr (slow perc)	1.00 0.50	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
Aspocket-----	25	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes > 15% Depth to bedrock 40 - 72"	1.00 1.00 0.59	Limitations Slopes > 8% Permeability > 2"/hr (seepage) Fragments (>3") 20-35%	1.00 1.00 0.24

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
Hawkridge-----	25	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
800: Grandridge-----	60	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Delhew-----	30	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
801: Grandridge-----	40	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Delhew-----	25	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Bullville-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
810: Corbett-----	55	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Toiyabe-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
820: Freelpeak-----	50	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Windyridge-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Rock Outcrop-----	10	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
830: Windyridge-----	45	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8%	1.00 1.00
Freelpeak-----	25	Limitations Depth to bedrock < 40" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 8%	1.00
840: Lavaspring-----	55	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Flooding >= occasional Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.50
Trespass-----	25	Limitations Saturation < 4' depth Seepage in bottom layer Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Saturation at < 3.5' depth Permeability > 2"/hr (seepage) Flooding = rare	1.00 1.00 0.50
Lavaspring-----	10	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Flooding >= occasional Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.50
850: Lunder-----	90	Limitations Depth to pan < 40" Restricted permeability due to bedrock or hardpan	1.00 1.00	Limitations Depth to pan < 40" Slopes 2 to 8%	1.00 0.50
851: Lunder-----	50	Limitations Depth to pan < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Depth to pan < 40" Slopes > 8%	1.00 1.00
Leviathan-----	35	Limitations Slopes > 15% Permeability < .6"/hr in 24-60" (slow perc)	1.00 1.00	Limitations Slopes > 8%	1.00
860: Hardnut-----	55	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Ocashe-----	30	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
870: Epvip-----	40	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
Domehill-----	30	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Ashflat-----	15	Limitations Permeability < .6"/hr in 24-60" (slow perc) Slopes 8 to 15%	1.00 0.09	Limitations Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 0.50
871: Halfash-----	50	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Domehill-----	35	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
872: Epvip-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Vetash-----	25	Limitations Slopes > 15% Seepage in bottom layer Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
Epvip-----	20	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
873: Epvip-----	35	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Hardnut-----	35	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (hard) < 40" depth Slopes > 8%	1.00 1.00
Vetash-----	15	Limitations Slopes > 15% Seepage in bottom layer Permeability ranges .6 - 2"/hr (slow perc)	1.00 1.00 0.50	Limitations Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00
880: Mopana-----	90	Limitations Depth to pan < 40" Restricted permeability due to bedrock or hardpan	1.00 1.00	Limitations Depth to pan < 40" Slopes 2 to 8%	1.00 0.33

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
890: Masonic-----	40	Limitations Depth to bedrock < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Epvip-----	30	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock (soft) < 40" depth Slopes > 8% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Domehill-----	15	Limitations Depth to bedrock < 40" Restricted permeability due to bedrock or hardpan Slopes 8 to 15%	1.00 1.00 0.09	Limitations Bedrock (hard) < 40" depth Slopes > 8% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
900: Brokenhoe-----	60	Limitations Depth to pan < 40" Slopes > 15% Restricted permeability due to bedrock or hardpan	1.00 1.00 1.00	Limitations Depth to pan < 40" Slopes > 8% Fragments (>3") > 35%	1.00 1.00 1.00
Fisherdig-----	25	Limitations Depth to pan < 40" Restricted permeability due to bedrock or hardpan Fragments (>3") 25 to 50%	1.00 1.00 0.14	Limitations Depth to pan < 40" Fragments (>3") 20-35% Slopes 2 to 8%	1.00 0.80 0.50
910: Indian Creek-----	60	Limitations Depth to pan < 40" Restricted permeability due to bedrock or hardpan Seepage in bottom layer	1.00 1.00 1.00	Limitations Depth to pan < 40" Permeability > 2"/hr (seepage) Slopes 2 to 8%	1.00 1.00 0.50
Haybourne-----	25	Limitations Seepage in bottom layer Rare flooding	1.00 0.40	Limitations Permeability > 2"/hr (seepage) Flooding = rare	1.00 0.50
920: Aquic Torrifluvents-----	35	Limitations Fragments (>3") >50% Saturation < 4' depth Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00 1.00 1.00	Limitations Fragments (>3") > 35% Permeability > 2"/hr (seepage) Flooding = rare	1.00 1.00 0.50
Conway-----	25	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Flooding >= occasional Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.48
Torrifluventic Haploxerolls-----	25	Limitations Fragments (>3") >50% Permeability > 6"/hr in 24-60" (seepage and poor filter) Seepage in bottom layer	1.00 1.00 1.00	Limitations Permeability > 2"/hr (seepage) Fragments (>3") > 35% Flooding = rare	1.00 1.00 0.50
930: Lavaspring-----	60	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Flooding >= occasional Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.50

TABLE 17.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic Tank Absorption Fields		Sewage Lagoons	
		Limitation	Value	Limitation	Value
Lavaspring-----	25	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Flooding >= occasional Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.50
960: Rose Creek-----	85	Limitations Flooding Saturation < 4' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Flooding >= occasional Permeability > 2"/hr (seepage) Saturation from 3.5 to 5' depth	1.00 1.00 0.50
998: Dumps-----	60	Not rated		Not rated	
Pits-----	30	Not rated		Not rated	
999: Water-----	100	Not rated		Not rated	

The interpretation for septic tanks adsorption fields evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, depth to hard or soft bedrock, depth to cemented pans, permeability that is too fast allowing seepage, and permeability that is too slow or an impermeable layer at shallow depth. The interpretation for sewage lagoons evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, organic Unified classes for low strength (PT, OL, OH), depth to hard or soft bedrock, depth to cemented pan, fragments greater than 3 inches in size, and permeability that is too fast allowing seepage.

TABLE 18.--Sanitary Facilities (Part 2)

Pacific Southwest MLRA Office Interpretations

The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only three highest value limitations are listed. There may be more limitations. Fine earth fractions and coarse fragments are reported on a weight basis. A brief rating criteria summary and abbreviations are listed on the last page of this report.

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
100: Lithnip-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Hawkinspeak-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
101: Lithnip, moist-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Rock Outcrop-----	25	Not rated		Not rated		Not rated	
Fishsnooze-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.89
102: Lithnip-----	40	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Rock Outcrop-----	25	Not rated		Not rated		Not rated	
Fishsnooze-----	20	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") 25-50%	0.89
103: Lithnip-----	40	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (<75mm) > 50%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00			Slopes > 15%	1.00
Meiss-----	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	0.50
Hawkinspeak-----	15	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
						Fragments (<75mm) > 50%	0.99
110: Jobsis-----	45	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00	Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00			Slopes > 15%	1.00
Whittell-----	25	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") > 50%	1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
111: Whittell-----	45	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Permeability > 2.0 in/hr	1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Jobsis-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
112: Jobsis-----	45	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Permeability > 2.0 in/hr Slopes > 15%	1.00 1.00 1.00
Whittell-----	25	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Slopes > 15%	1.00 1.00 1.00	Limitations Seepage in 20-40" depth Bedrock depth < 40" Slopes > 15%	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Permeability > 2.0 in/hr Fragments (>3") > 50%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
113: Whittell-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth < 40"	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 1.00
Jobsis-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
120: Toiyabe-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 1.00
Corbett-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth < 40"	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Texture is s, fs, cos, sg	1.00 1.00 1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
121: Toiyabe-----	45	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00	Slopes > 15%	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00			Slopes > 15%	1.00
Corbett-----	35	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Permeability > 2.0 in/hr	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
122: Toiyabe-----	50	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	1.00
Corbett-----	20	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Permeability > 2.0 in/hr	1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
130: Sofgran-----	40	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00			Fragments (<75mm) 25-50%	0.97
Klauspeak-----	30	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
		Sandy textures (cos, s, fs, lcos, or vfs	1.00			Permeability > 2.0 in/hr	1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Temo-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Texture is s, fs, cos, sg	1.00 1.00 1.00
131: Sofgran-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr Fragments (<75mm) 25-50%	1.00 1.00 0.97
Temo-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Texture is s, fs, cos, sg	1.00 1.00 1.00
Shalgran-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Texture is s, fs, cos, sg	1.00 1.00 1.00
132: Sofgran-----	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Permeability > 2.0 in/hr Fragments (<75mm) 25-50%	1.00 1.00 0.97
Temo-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Texture is s, fs, cos, sg	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
140: Temo-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Texture is s, fs, cos, sg	1.00 1.00 1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Dagget-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 1.00 0.99	Not suited Slopes > 15% Permeability > 2.0 in/hr Depth to bedrock from 40-60"	1.00 1.00 0.99
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
150: Mottskel-----	85	Limitations Seepage in bottom layer Flooding = rare Sandy textures (cosl, ls, lfs, or lvfs)	1.00 0.50 0.50	Limitations Seepage in 20-40" depth Rare flooding Slopes 8 to 15%	1.00 0.40 0.16	Not suited Permeability > 2.0 in/hr Fragments (>3") 25-50% Texture is lcos, ls, lfs, vfs	1.00 0.97 0.50
160: Hopeval-----	50	Limitations Flooding >= occasional Saturation < 6' depth Sandy textures (cos, s, fs, lcos, or vfs)	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Occasional flooding	1.00 1.00 0.60	Not suited Saturation < 18" depth Texture is s, fs, cos, sg Permeability > 2.0 in/hr	1.00 1.00 0.50
Hopeval-----	35	Limitations Flooding >= occasional Saturation < 6' depth Sandy textures (cos, s, fs, lcos, or vfs)	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Occasional flooding	1.00 1.00 0.60	Not suited Saturation < 18" depth Texture is s, fs, cos, sg Permeability > 2.0 in/hr	1.00 1.00 0.50
162: Corralval-----	45	Limitations Saturation < 6' depth Seepage in bottom layer Flooding = rare	1.00 1.00 0.50	Limitations Saturation < 5' depth Seepage in 20-40" depth Rare flooding	1.00 1.00 0.40	Suited Fragments (<75mm) 25-50% Permeability > 2.0 in/hr Saturation from 18 to 40" depth	0.81 0.50 0.50
Hopeval-----	45	Limitations Flooding >= occasional Saturation < 6' depth Sandy textures (cos, s, fs, lcos, or vfs)	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Occasional flooding	1.00 1.00 0.60	Not suited Saturation < 18" depth Texture is s, fs, cos, sg Permeability > 2.0 in/hr	1.00 1.00 0.50
170: Burnlake-----	60	Limitations Seepage in bottom layer Slopes > 15% Sandy textures (cosl, ls, lfs, or lvfs)	1.00 1.00 0.50	Limitations Seepage in 20-40" depth Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Permeability > 2.0 in/hr Slopes > 15%	1.00 1.00 1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Roadcat-----	25	Limitations Seepage in bottom layer Slopes > 15% Sandy textures (cosl, ls, lfs, or lvfs)	1.00 1.00 0.50	Limitations Seepage in 20-40" depth Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Permeability > 2.0 in/hr Slopes > 15%	1.00 1.00 1.00
171: Stumpatil-----	65	Limitations Slopes > 15% Fragments (3-10") 15-35%	1.00 0.04	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.88 0.01
Morscour-----	20	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
172: Stumpatil-----	85	Limitations Slopes > 15% Fragments (3-10") 15-35%	1.00 0.04	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.88 0.01
173: Stumpatil-----	85	Limitations Slopes > 15% Fragments (3-10") 15-35%	1.00 0.04	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.88 0.01
174: Stumpatil-----	35	Limitations Slopes > 15% Fragments (3-10") 15-35%	1.00 0.04	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.88 0.01
Sonorapass-----	30	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15% Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.88
Snowtell-----	20	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.76

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
180: Shalgran-----	70	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Texture is s, fs, cos, sg	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
190: Hopeval-----	50	Limitations Flooding >= occasional Saturation < 6' depth Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Occasional flooding	1.00 1.00 0.60	Not suited Saturation < 18" depth Texture is s, fs, cos, sg Permeability > 2.0 in/hr	1.00 1.00 0.50
Hopeval-----	35	Limitations Flooding >= occasional Saturation < 6' depth Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Occasional flooding	1.00 1.00 0.60	Not suited Saturation < 18" depth Texture is s, fs, cos, sg Permeability > 2.0 in/hr	1.00 1.00 0.50
200: Cavebear-----	35	Limitations Saturation < 6' depth Sandy textures (cos, s, fs, lcos, or vfs Seepage in bottom layer	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Rare flooding	1.00 1.00 0.40	Not suited Fragments (<75mm) > 50% Texture is s, fs, cos, sg Permeability > 2.0 in/hr	1.00 1.00 1.00
Hopeval-----	25	Limitations Flooding >= occasional Saturation < 6' depth Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Occasional flooding	1.00 1.00 0.60	Not suited Saturation < 18" depth Texture is s, fs, cos, sg Permeability > 2.0 in/hr	1.00 1.00 0.50
Hopeval-----	20	Limitations Flooding >= occasional Saturation < 6' depth Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Occasional flooding	1.00 1.00 0.60	Not suited Saturation < 18" depth Texture is s, fs, cos, sg Permeability > 2.0 in/hr	1.00 1.00 0.50
210: Waterpeak-----	80	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (>3") 25-50% Permeability > 2.0 in/hr	1.00 0.83 0.50

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
211: Waterpeak-----	50	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") 25-50%	0.83
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	0.50
Buggin-----	25	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Fragments (<75mm) > 50%	1.00
		Seepage in bottom layer	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00			Slopes > 15%	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
212: Waterpeak-----	45	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (>3") 25-50%	0.83
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	0.50
Sofgran-----	25	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00			Fragments (<75mm) 25-50%	0.97
Temo-----	15	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Sandy textures (cos, s, fs, lcos, or vfs	1.00	Slopes > 15%	1.00	Texture is s, fs, cos, sg	1.00
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	1.00
220: Hardtil-----	45	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Fragments (<75mm) > 50%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00	Slopes > 15%	1.00	Saturation < 18" depth	1.00
Alpineco-----	25	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Fragments (>3") > 50%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Seepage in 20-40" depth	1.00	Depth to bedrock from 40- 60"	0.54

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
221: Hardtil-----	45	Limitations Saturation < 6' depth Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00 1.00	Limitations Slopes > 15% Saturation < 5' depth Bedrock depth < 40"	1.00 1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Alpineco-----	25	Limitations Saturation < 6' depth Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00 1.00	Limitations Slopes > 15% Saturation < 5' depth Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Slopes > 15% Fragments (>3") > 50% Depth to bedrock from 40- 60"	1.00 1.00 0.54
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
222: Hardtil-----	40	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Saturation < 5' depth Bedrock depth < 40" Slopes > 15%	1.00 1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Saturation < 18" depth	1.00 1.00 1.00
Alpineco-----	25	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00 1.00	Limitations Saturation < 5' depth Slopes > 15% Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Fragments (>3") > 50% Slopes > 15% Depth to bedrock from 40- 60"	1.00 1.00 0.54
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
230: Hawkinspeak-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
Thiefride-----	25	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") > 35% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.94

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Angelwhine-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
231: Hawkinspeak-----	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
Hawkinspeak-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
232: Hawkinspeak-----	45	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
Hawkinspeak-----	25	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
Hawkridge-----	15	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
233: Angelwhine-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
Hawkinspeak-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Hawkridge-----	25	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
234: Hawkinspeak-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
Hawkinspeak-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
Thief ridge-----	20	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") > 35% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.94
235: Hawkinspeak-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
Hawkinspeak-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
Angelwhine-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
240: Granylith-----	45	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Saturation < 5' depth Bedrock depth < 40" Slopes > 15%	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Saturation < 18" depth Permeability > 2.0 in/hr	1.00 1.00 1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Hargran-----	25	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00 1.00	Limitations Saturation < 5' depth Bedrock depth < 40" Slopes > 15%	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.50
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
250: Florand-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 1.00 0.71	Not suited Slopes > 15% Fragments (<75mm) 25-50% Depth to bedrock from 40-60"	1.00 0.76 0.71
Lostridge-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Fishsnooze-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.90
260: Hawkridge-----	35	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Hawkinspeak-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
Hawkinspeak-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
261: Hawkridge-----	30	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
Lithnip-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Hawkinspeak-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
262: Domehill-----	50	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Kiote-----	35	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (<75mm) > 50% Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.50
270: Duco-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
Smallcone-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Cagle-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Depth to bedrock < 40" Slopes > 15% Packing (OL, OH, CH or MH)	1.00 1.00 1.00
271: Duco-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Silt or clay textures from 10-60"	1.00 1.00 0.50
Vetagrande-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
Pinenut-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
280: Longcreek-----	50	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Silty clay or clay 10-60" Packing (OL, OH, CH or MH)	1.00 1.00 1.00
Devada-----	35	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay	1.00 1.00	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40" Silty clay or clay 10-60" Packing (OL, OH, CH or MH)	1.00 1.00 1.00
290: Pernty-----	55	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.86
Chen-----	30	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay Slopes 8 to 15%	1.00 1.00 0.16	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.16	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Silty clay or clay 10-60"	1.00 1.00 1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
310: Bagval-----	40	Limitations Clay or silty clay Flooding = rare	1.00 0.50	Limitations Rare flooding	0.40	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH or MH) Clay or silty clay	1.00 1.00 1.00
Bagval-----	25	Limitations Saturation < 6' depth Clay or silty clay Flooding = rare	1.00 1.00 0.50	Limitations Saturation < 5' depth Rare flooding	1.00 0.40	Not suited Silty clay or clay 10-60" Packing (OL, OH, CH or MH) Clay or silty clay	1.00 1.00 1.00
Wetbag-----	15	Limitations Saturation < 6' depth Clay or silty clay Flooding = rare	1.00 1.00 0.50	Limitations Saturation < 5' depth Rare flooding	1.00 0.40	Not suited Saturation < 18" depth Silty clay or clay 10-60" Packing (OL, OH, CH or MH)	1.00 1.00 1.00
Wetbag-----	10	Limitations Flooding >= occasional Saturation < 6' depth Clay or silty clay	1.00 1.00 1.00	Limitations Saturation < 5' depth Occasional flooding	1.00 0.60	Not suited Saturation < 18" depth Silty clay or clay 10-60" Packing (OL, OH, CH or MH)	1.00 1.00 1.00
320: Franktown-----	75	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
330: Oest-----	85	No limitations		No limitations		Suited Fragments (>3") 25-50% Fragments (<75mm) 25-50%	0.64 0.30
340: Aspocket-----	55	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.14	Not suited Slopes > 15% Depth to bedrock from 40-60" Fragments (>3") 25-50%	1.00 0.14 0.05
Aspocket-----	30	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.14	Not suited Slopes > 15% Depth to bedrock from 40-60" Fragments (>3") 25-50%	1.00 0.14 0.05

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
350:							
Leroman-----	45	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Fragments (3-10") 15-35%	1.00 1.00 0.06	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.93
Chenhigh-----	20	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Silty clay or clay 10-60"	1.00 1.00 1.00
Celeridge-----	10	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Dogbed-----	10	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
360:							
Monibasin-----	70	Limitations Slopes 8 to 15%	0.09	Limitations Slopes 8 to 15%	0.09	Suited Fragments (>3") 25-50% Slopes 8 to 15%	0.86 0.09
Vermdig-----	15	Limitations Saturation < 2' depth (perched) Saturation < 6' depth Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations saturation < 18" depth Saturation < 5' depth	1.00 1.00	Not suited Saturation < 18" depth Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
370:							
Celeridge-----	30	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Gerdog-----	25	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Loope-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40"	1.00 1.00
						Slopes > 15%	1.00
Pinew-----	10	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40"	1.00
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15%	1.00
						Fragments (<75mm) > 50%	0.99
380: Joecut-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
		Clay loam, silty clay, silty clay loam	0.50			Fragments (<75mm) 25-50%	0.90
						Silt or clay textures from 10-60"	0.50
Celeridge-----	20	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Bedrock depth < 40"	1.00	Not suited Fragments (<75mm) > 50%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
						Slopes > 15%	1.00
Joecut-----	15	Limitations Saturation < 6' depth Slopes > 15%	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Saturation < 5' depth	1.00	Fragments (<75mm) 25-50%	0.88
						Silt or clay textures from 10-60"	0.50
Gerdog-----	10	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
						Fragments (<75mm) > 50%	0.99
381: Heenlake-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40"	1.00
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15%	1.00
						Fragments (<75mm) 25-50%	0.68

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Loope-----	10	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40"	1.00 1.00
						Slopes > 15%	1.00
Joecut-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50%	1.00 0.92
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
Joecut-----	30	Limitations Saturation < 6' depth Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00 1.00	Limitations Slopes > 15% Saturation < 5' depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Silt or clay textures from 10-60"	1.00 0.88 0.50
382: Joecut-----	55	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50%	1.00 0.92
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
Joecut-----	30	Limitations Saturation < 6' depth Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00 1.00	Limitations Slopes > 15% Saturation < 5' depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Silt or clay textures from 10-60"	1.00 0.88 0.50
390: Heenlake-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15%	1.00 1.00
		Clay loam, silty clay, silty clay loam	0.50			Fragments (<75mm) 25-50%	0.77
Loope-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40"	1.00 1.00
						Slopes > 15%	1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Chenhigh-----	15	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Silty clay or clay 10-60"	1.00 1.00 1.00
391: Heenlake-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.68
Loope-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Dogbed-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
392: Heenlake-----	50	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.68
Loope-----	35	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
400: Pinew-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Carshal-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.97
Loope-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Celeridge-----	10	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
401: Pinew-----	75	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
410: Wolfcut-----	85	Limitations Slopes > 15% Flooding = rare Fragments (3-10") 15-35%	1.00 0.50 0.11	Limitations Slopes > 15% Rare flooding	1.00 0.40	Not suited Fragments (<75mm) > 50% Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.13
420: Buggin-----	75	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
430: Newcone-----	75	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
440: Dogbed-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
Celeridge-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Carshal-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.97
Joecut-----	10	Limitations Saturation < 6' depth Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00 1.00	Limitations Slopes > 15% Saturation < 5' depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Silt or clay textures from 10-60"	1.00 0.88 0.50
450: Carshal-----	55	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.97
Loope-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
460: Toejom-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Texture is s, fs, cos, sg	1.00 1.00 1.00
Pimogran-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Texture is s, fs, cos, sg	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
461: Toejom-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Texture is s, fs, cos, sg	1.00 1.00 1.00
Pimogran-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Texture is s, fs, cos, sg	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
462: Toejom-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Texture is s, fs, cos, sg	1.00 1.00 1.00
Glenbrook-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Sandy textures (cosl, ls, lfs, or lvfs)	1.00 1.00 0.50	Limitations Slopes > 15%	1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Pimogran-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Texture is s, fs, cos, sg	1.00 1.00 1.00
470: Sumeadow-----	55	Limitations Slopes > 15% Seepage in bottom layer Fragments (3-10") 15-35%	1.00 1.00 0.63	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (<75mm) > 50% Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.50
Lostridge-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
471: Sumeadow-----	55	Limitations Slopes > 15% Seepage in bottom layer Fragments (3-10") 15-35%	1.00 1.00 0.63	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (<75mm) > 50% Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.50
Sumeadow-----	30	Limitations Seepage in bottom layer Fragments (3-10") 15-35% Slopes 8 to 15%	1.00 0.63 0.09	Limitations Seepage in 20-40" depth Slopes 8 to 15%	1.00 0.09	Not suited Fragments (<75mm) > 50% Permeability > 2.0 in/hr Fragments (>3") 25-50%	1.00 0.50 0.20
480: Aspetill-----	60	Limitations Slopes > 15% Fragments (3-10") 15-35%	1.00 0.82	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.97 0.37
Aspetill-----	25	Limitations Slopes > 15% Fragments (3-10") 15-35%	1.00 0.82	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.97 0.37
481: Aspetill-----	50	Limitations Slopes > 15% Fragments (3-10") 15-35%	1.00 0.82	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.97 0.37

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Aspetill-----	35	Limitations Slopes > 15% Fragments (3-10") 15-35%	1.00 0.86	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.93 0.59
490: Cloudburst-----	50	Limitations Fragments (3-10") > 35% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (>3") > 50% Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.50
Murain-----	35	Limitations Fragments (3-10") > 35% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (>3") > 50% Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.50
491: Cloudburst-----	45	Limitations Slopes > 15% Fragments (3-10") > 35% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (>3") > 50% Permeability > 2.0 in/hr	1.00 1.00 0.50
Murain-----	25	Limitations Slopes > 15% Fragments (3-10") > 35% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (>3") > 50% Permeability > 2.0 in/hr	1.00 1.00 0.50
Hardtil-----	15	Limitations Saturation < 6' depth Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Saturation < 5' depth Bedrock depth < 40" Slopes > 15%	1.00 1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Saturation < 18" depth	1.00 1.00 1.00
500: Chrisflat-----	90	Limitations Seepage in bottom layer Slopes 8 to 15% Fragments (3-10") 15-35%	1.00 0.09 0.01	Limitations Seepage in 20-40" depth Very rare flooding Slopes 8 to 15%	1.00 0.20 0.09	Suited Fragments (>3") 25-50% Fragments (<75mm) 25-50% Permeability > 2.0 in/hr	0.71 0.56 0.50
510: Rubble Land-----	40	Not rated		Not rated		Not rated	
Lithnip-----	20	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Fishsnooze-----	10	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15% Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.90
511: Rock Outcrop-----	40	Not rated		Not rated		Not rated	
Snowtell-----	30	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.76
Forsell-----	15	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.89 0.60
512: Rock Outcrop-----	50	Not rated		Not rated		Not rated	
Snowtell-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.76
513: Rubble Land-----	40	Not rated		Not rated		Not rated	
Holdon-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 1.00 0.71	Not suited Slopes > 15% Permeability > 2.0 in/hr Fragments (>3") > 50%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
520: Canfire-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Crispy-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
530: Elaero-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.96
Lockgate-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth from 40-60"	1.00 1.00 0.96	Not suited Fragments (<75mm) > 50% Slopes > 15% Depth to bedrock from 40-60"	1.00 1.00 0.96
Granhogany-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 1.00
Granidry-----	10	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
531: Elaero-----	55	Limitations Lithic or paralithic bedrock < 72" Seepage in bottom layer Slopes 8 to 15%	1.00 1.00 0.09	Limitations Bedrock depth < 40" Seepage in 20-40" depth Slopes 8 to 15%	1.00 1.00 0.09	Not suited Depth to bedrock < 40" Fragments (<75mm) 25-50% Permeability > 2.0 in/hr	1.00 0.83 0.50
Elaero-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.96

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
532: Elaero-----	55	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.96
Granidry-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
540: Lostcannon, moist-----	45	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) > 50% Permeability > 2.0 in/hr	1.00 0.99 0.50
Lostcannon-----	40	Limitations Slopes > 15% Seepage in bottom layer	1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) > 50% Permeability > 2.0 in/hr	1.00 0.99 0.50
560: Dunderberg-----	30	Limitations Fragments (3-10") > 35% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.96 0.73
Dunderberg, warm-----	25	Limitations Fragments (3-10") > 35% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.96 0.73
Conwayridge-----	20	Limitations Fragments (3-10") > 35% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (>3") > 50% Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.50
Dunderberg, moist-----	10	Limitations Fragments (3-10") > 35% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.96 0.73

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
561: Dunderberg-----	40	Limitations Fragments (3-10") > 35% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.96 0.73
Dunderberg, warm-----	30	Limitations Fragments (3-10") > 35% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.96 0.73
Dunderberg, moist-----	15	Limitations Fragments (3-10") > 35% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.96 0.73
570: Angelwhine-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
Hawkinspeak-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
Hawkridge-----	25	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
580: Murain-----	50	Limitations Fragments (3-10") > 35% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (>3") > 50% Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.50
Shorthike-----	20	Limitations Slopes > 15% Seepage in bottom layer Fragments (3-10") 15-35%	1.00 1.00 0.05	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (<75mm) > 50% Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.50
Murain, moist-----	15	Limitations Slopes > 15% Fragments (3-10") > 35% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (>3") > 50% Permeability > 2.0 in/hr	1.00 1.00 0.50

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
581: Murain-----	45	Limitations Fragments (3-10") > 35% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (>3") > 50% Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.50
Murain-----	40	Limitations Fragments (3-10") > 35% Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (>3") > 50% Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 0.50
590: Loope-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Heenlake-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.68
Carshal-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.97
591: Loope-----	40	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Heenlake-----	30	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.68
Celeridge-----	15	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
592: Loope-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40"	1.00 1.00
						Slopes > 15%	1.00
Pinew-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40"	1.00
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15%	1.00
						Fragments (<75mm) > 50%	0.99
Heenlake-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40"	1.00
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15%	1.00
						Fragments (<75mm) 25-50%	0.68
600: Snowtell-----	45	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00			Fragments (<75mm) 25-50%	0.76
Sonorapass-----	25	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (<75mm) 25-50%	0.88
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
610: Forsell-----	50	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
		Slopes > 15%	1.00	Seepage in 20-40" depth	1.00	Fragments (<75mm) 25-50%	0.89
		Seepage in bottom layer	1.00			Fragments (>3") 25-50%	0.60
Snowtell-----	25	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Bedrock depth < 40"	1.00	Not suited Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00			Fragments (<75mm) 25-50%	0.76
Rock Outcrop-----	10	Not rated		Not rated		Not rated	

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
611: Forsell-----	50	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Fragments (>3") 25-50%	1.00 0.89 0.60
Snowtell-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.76
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
620: Indian Creek-----	90	Limitations Depth to thin cemented pan	0.50	No limitations		Not suited Depth to pan < 40" Packing (OL, OH, CH or MH) Fragments (<75mm) 25-50%	1.00 1.00 0.01
630: Olac-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Flex-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Duco-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.66
640: Koontz-----	55	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Nosrac-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50%	1.00 0.95
650: Shree-----	90	Limitations Flooding = rare Slopes 8 to 15%	0.50 0.16	Limitations Rare flooding Slopes 8 to 15%	0.40 0.16	Not suited Fragments (<75mm) > 50% Slopes 8 to 15%	1.00 0.16
651: Shree-----	50	Limitations Flooding = rare	0.50	Limitations Rare flooding	0.40	Not suited Fragments (<75mm) > 50%	1.00
Holbrook-----	35	Limitations Seepage in bottom layer Flooding = rare Fragments (3-10") 15-35%	1.00 0.50 0.04	Limitations Seepage in 20-40" depth Rare flooding	1.00 0.40	Suited Fragments (<75mm) 25-50% Permeability > 2.0 in/hr Fragments (>3") 25-50%	0.92 0.50 0.23
660: Delhew-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
Grandridge-----	30	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Bakscratch-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
670: Springmeyer-----	85	Limitations Sandy textures (cosl, ls, lfs, or lvfs)	0.50	No limitations		Suited Texture is lcos, ls, lfs, vfs Fragments (<75mm) 25-50%	0.50 0.13
671: Springmeyer-----	50	Limitations Sandy textures (cosl, ls, lfs, or lvfs)	0.50	No limitations		Suited Texture is lcos, ls, lfs, vfs Fragments (<75mm) 25-50%	0.50 0.23

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Cassiro-----	35	Limitations Lithic or paralithic bedrock < 72"	1.00	No limitations		Suited Fragments (<75mm) 25-50%	0.92
						Depth to bedrock from 40- 60"	0.84
680: Rolldown-----	40	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50%	1.00
						Slopes > 15%	1.00
Mountpatterson-----	25	Limitations Lithic or paralithic bedrock < 72"	1.00	Limitations Bedrock depth < 40"	1.00	Not suited Fragments (<75mm) > 50%	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Fragments (3-10") 15-35%	0.50			Slopes > 15%	1.00
Rubble Land-----	20	Not rated		Not rated		Not rated	
700: Coldtree-----	75	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Fragments (>3") 25-50%	0.90
		Fragments (3-10") > 35%	1.00	Bedrock depth from 40-60"	0.88	Depth to bedrock from 40- 60"	0.88
Rubble Land-----	10	Not rated		Not rated		Not rated	
710: Bakscratch-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00			Slopes > 15%	1.00
Grandridge-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
						Slopes > 15%	1.00
McTom-----	15	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Permeability > 2.0 in/hr	1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
720: Nohelp-----	55	Limitations Slopes > 15% Fragments (3-10") 15-35% Clay loam, silty clay, silty clay loam	1.00 0.55 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50% Silt or clay textures from 10-60"	1.00 0.87 0.50
Joenchris-----	35	Limitations Slopes > 15% Fragments (3-10") 15-35% Clay loam, silty clay, silty clay loam	1.00 0.76 0.50	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Silt or clay textures from 10-60" Clay loam, silty clay, silty clay loam	1.00 0.50 0.50
730: Burchflat-----	55	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Seepage in bottom layer	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15% Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.94
Loope-----	30	Limitations Lithic or paralithic bedrock < 72" Slopes 8 to 15%	1.00 0.16	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.16	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes 8 to 15%	1.00 1.00 0.16
731: Burchflat-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.94
Celeridge-----	20	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Loope-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
740: Jackflat-----	55	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Fragments (3-10") 15-35%	1.00 1.00 0.10	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.84	Not suited Slopes > 15% Depth to bedrock from 40- 60" Fragments (>3") 25-50%	1.00 0.84 0.46
Grandridge-----	30	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
760: Thiefridge-----	45	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.94
Thiefridge-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") > 35%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.94
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
770: Sweetmount-----	50	Limitations Lithic or paralithic bedrock < 72" Clay or silty clay Slopes > 15%	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.08	Not suited Fragments (<75mm) > 50% Silty clay or clay 10-60" Clay or silty clay	1.00 1.00 1.00
Hawkinspeak-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
Hawkridge-----	15	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
780: Granhogany-----	65	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 1.00
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
790: Dab-----	50	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
Dab-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
791: Dab-----	45	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
Longday-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Fragments (3-10") 15-35%	1.00 1.00 0.05	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
Thiefridge-----	15	Limitations Lithic or paralithic bedrock < 72" Fragments (3-10") > 35% Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.94
792: Dab-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
Aspocket-----	25	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Slopes > 15% Bedrock depth from 40-60"	1.00 0.14	Not suited Slopes > 15% Depth to bedrock from 40- 60" Fragments (>3") 25-50%	1.00 0.14 0.05

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Hawkridge-----	25	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) > 50%	1.00 1.00 0.99
800: Grandridge-----	60	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Delhew-----	30	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
801: Grandridge-----	40	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Delhew-----	25	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Seepage in 20-40" depth	1.00 1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
Bullville-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
810: Corbett-----	55	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Seepage in 20-40" depth Bedrock depth < 40"	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 1.00
Toiyabe-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
820:							
Freelpeak-----	50	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Permeability > 2.0 in/hr	1.00
Windyridge-----	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (<75mm) > 50%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Seepage in bottom layer	1.00			Slopes > 15%	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
830:							
Windyridge-----	45	Limitations		Limitations		Not suited	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Fragments (<75mm) > 50%	1.00
		Seepage in bottom layer	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00			Slopes > 15%	1.00
Freelpeak-----	25	Limitations		Limitations		Not suited	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Permeability > 2.0 in/hr	1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
840:							
Lavaspring-----	55	Limitations		Limitations		Not suited	
		Flooding >= occasional	1.00	Saturation < 5' depth	1.00	Saturation < 18" depth	1.00
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	Fragments (<75mm) 25-50%	0.72
		Seepage in bottom layer	1.00	Occasional flooding	0.60	Permeability > 2.0 in/hr	0.50
Trespass-----	25	Limitations		Limitations		Not suited	
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Fragments (<75mm) > 50%	1.00
		Seepage in bottom layer	1.00	Rare flooding	0.40	Saturation from 18 to 40" depth	0.50
		Flooding = rare	0.50				
Lavaspring-----	10	Limitations		Limitations		Not suited	
		Flooding >= occasional	1.00	Saturation < 5' depth	1.00	Saturation < 18" depth	1.00
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	Fragments (<75mm) 25-50%	0.72
		Seepage in bottom layer	1.00	Occasional flooding	0.60	Permeability > 2.0 in/hr	0.50

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
850: Lunder-----	90	Limitations Clay or silty clay Depth to thick cemented pan	1.00 1.00	Limitations Depth to pan < 40"	1.00	Not suited Depth to pan < 40" Silty clay or clay 10-60" Packing (OL, OH, CH or MH)	1.00 1.00 1.00
851: Lunder-----	50	Limitations Clay or silty clay Depth to thick cemented pan Slopes > 15%	1.00 1.00 1.00	Limitations Depth to pan < 40" Slopes > 15%	1.00 1.00	Not suited Depth to pan < 40" Silty clay or clay 10-60" Packing (OL, OH, CH or MH)	1.00 1.00 1.00
Leviathan-----	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Not suited Slopes > 15% Fragments (<75mm) 25-50%	1.00 0.98
860: Hardnut-----	55	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Ocashe-----	30	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
870: Epvip-----	40	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15% Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Domehill-----	30	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Ashflat-----	15	Limitations Slopes 8 to 15%	0.09	Limitations Slopes 8 to 15%	0.09	Not suited Fragments (<75mm) > 50% Slopes 8 to 15%	0.99 0.09

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
871: Halfash-----	50	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Bedrock depth < 40" Slopes > 15% Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Domehill-----	35	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Clay loam, silty clay, silty clay loam	1.00 1.00 0.50	Limitations Bedrock depth < 40" Slopes > 15%	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
872: Epvip-----	40	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Vetash-----	25	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
Epvip-----	20	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40" Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
873: Epvip-----	35	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15% Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Hardnut-----	35	Limitations Slopes > 15% Lithic or paralithic bedrock < 72"	1.00 1.00	Limitations Slopes > 15% Bedrock depth < 40"	1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Vetash-----	15	Limitations Slopes > 15% Lithic or paralithic bedrock < 72" Seepage in bottom layer	1.00 1.00 1.00	Limitations Slopes > 15%	1.00	Not suited Fragments (<75mm) > 50% Slopes > 15%	1.00 1.00
880: Mopana-----	90	Limitations Clay or silty clay Depth to thick cemented pan	1.00 1.00	Limitations Depth to pan < 40"	1.00	Not suited Depth to pan < 40" Silty clay or clay 10-60" Clay or silty clay	1.00 1.00 1.00
890: Masonic-----	40	Limitations Lithic or paralithic bedrock < 72" Slopes > 15% Fragments (3-10") 15-35%	1.00 1.00 0.59	Limitations Bedrock depth < 40" Slopes > 15% Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Depth to bedrock < 40" Slopes > 15% Fragments (<75mm) 25-50%	1.00 1.00 0.96
Epvip-----	30	Limitations Lithic or paralithic bedrock < 72" Slopes > 15%	1.00 1.00	Limitations Bedrock depth < 40" Slopes > 15% Seepage in 20-40" depth	1.00 1.00 1.00	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Slopes > 15%	1.00 1.00 1.00
Domehill-----	15	Limitations Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam Slopes 8 to 15%	1.00 0.50 0.09	Limitations Bedrock depth < 40" Slopes 8 to 15%	1.00 0.09	Not suited Fragments (<75mm) > 50% Depth to bedrock < 40" Silt or clay textures from 10-60"	1.00 1.00 0.50
900: Brokenhoe-----	60	Limitations Depth to thick cemented pan Slopes > 15% Fragments (3-10") 15-35%	1.00 1.00 0.95	Limitations Depth to pan < 40" Slopes > 15%	1.00 1.00	Not suited Depth to pan < 40" Slopes > 15% Fragments (>3") 25-50%	1.00 1.00 0.87
Fisherdig-----	25	Limitations Clay or silty clay Depth to thick cemented pan Fragments (3-10") 15-35%	1.00 1.00 0.58	Limitations Depth to pan < 40"	1.00	Not suited Depth to pan < 40" Silty clay or clay 10-60" Clay or silty clay	1.00 1.00 1.00
910: Indian Creek-----	60	Limitations Depth to thick cemented pan	1.00	No limitations		Not suited Depth to pan < 40" Packing (OL, OH, CH or MH) Fragments (<75mm) 25-50%	1.00 1.00 0.01

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
Haybourne-----	25	Limitations Sandy textures (cos, s, fs, lcos, or vfs Flooding = rare	1.00 0.50	Limitations Rare flooding	0.40	Not suited Texture is s, fs, cos, sg Permeability > 2.0 in/hr Fragments (<75mm) 25-50%	1.00 0.50 0.01
920: Aquic Torrifluvents----	35	Not rated		Limitations Saturation < 5' depth Rare flooding	1.00 0.40	Not rated	
Conway-----	25	Limitations Flooding >= occasional Saturation < 6' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Occasional flooding	1.00 1.00 0.60	Suited Saturation from 18 to 40" depth Permeability > 2.0 in/hr Fragments (<75mm) 25-50%	0.68 0.52 0.12
Torrifluventic Haploxerolls-----	25	Not rated		Limitations Seepage in 20-40" depth Rare flooding	1.00 0.40	Not rated	
930: Lavaspring-----	60	Limitations Flooding >= occasional Saturation < 6' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Occasional flooding	1.00 1.00 0.60	Suited Fragments (<75mm) 25-50% Permeability > 2.0 in/hr Saturation from 18 to 40" depth	0.72 0.50 0.01
Lavaspring-----	25	Limitations Flooding >= occasional Saturation < 6' depth Seepage in bottom layer	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Occasional flooding	1.00 1.00 0.60	Not suited Saturation < 18" depth Fragments (<75mm) 25-50% Permeability > 2.0 in/hr	1.00 0.72 0.50
960: Rose Creek-----	85	Limitations Flooding >= occasional Saturation < 6' depth Sandy textures (cos, s, fs, lcos, or vfs	1.00 1.00 1.00	Limitations Saturation < 5' depth Seepage in 20-40" depth Frequent flooding	1.00 1.00 0.80	Not suited Texture is s, fs, cos, sg Saturation from 18 to 40" depth Permeability > 2.0 in/hr	1.00 0.68 0.50
998: Dumps-----	60	Not rated		Not rated		Not rated	
Pits-----	30	Not rated		Not rated		Not rated	

TABLE 18.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary Landfill Trench Type		Sanitary Landfill Area Type		Daily Cover for Landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
999: Water-----	100	Not rated		Not rated		Not rated	

The interpretation for sanitary landfill (trench) evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, depth to hard or soft bedrock, depth to thick or thin cemented pans, fragments 3 to 10 inches in size, sodium content (SAR), soil pH, clayey or sandy textures, and permeability that is too high allowing seepage in some climates.

The interpretation for sanitary landfill (area) evaluates the following soil properties at variable depths in the soil: flooding, ponding, wetness, slope, depth to bedrock, depth to cemented pan, and permeability that is too high allowing seepage in some climates.

The interpretation for daily cover for landfill evaluates the following soil properties at variable depths in the soil: ponding, wetness, slope, depth to bedrock, depth to cemented pan, fragments greater than or less than 3 inches in size, Unified class for peat (PT), Unified classes for packing (OL, OH, CH, MH), sandy or clayey textures, soil pH, carbonates, sodium content (SAR), salinity (EC), soil climate, kaolinitic mineralogy, and permeability that is too high allowing seepage.

TABLE 19.--Construction Materials (Part 1)

Pacific Southwest MLRA Office Interpretations

The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The closer the value is to 0, the greater the potential limitation. Values of 0 are absolute limitations based on the soil property criteria used to develop the interpretation. Values closer to 1.0 have less of a limitation. Limiting features with values = 1 have absolutely no limitation and are not shown in this report. Rating classes are determined by the most limiting value.

Fine earth fractions and fragment limiting features are reported on a weight basis.

A brief rating criteria summary and abbreviations used in the ratings are listed on the last page of this report.

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
100: Lithnip-----	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.25	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Hawkinspeak-----	30	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	
101: Lithnip, moist-----	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.25	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Rock Outcrop-----	25	Not Rated		Not Rated		Not rated	
Fishsnooze-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH between 4.5 - 6.5	0.00 0.00 0.78 0.88

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
102: Lithnip-----	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.25	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Rock Outcrop-----	25	Not Rated		Not Rated		Not rated	
Fishsnooze-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Depth to bedrock 20 to 40" pH between 4.5 - 6.5	0.00 0.00 0.78 0.88
103: Lithnip-----	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.25	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Meiss-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content pH between 4.5 - 6.5	0.00 0.00 0.00 0.92
Hawkinspeak-----	15	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68
110: Jobsis-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.61	Poor source Rock fragment content Slope > 15% Depth to bedrock 20 to 40" Sand fractions 75-85% pH between 4.5 - 6.5	0.00 0.00 0.00 0.06 0.88

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Whittell-----	25	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.03 0.14	Poor source Sand fractions > 85% Rock fragment content Slope > 15% Depth to bedrock 20 to 40" pH > 6.5 or is NULL	0.00 0.00 0.00 0.64 1.00
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	
111: Whittell-----	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.03 0.14	Poor source Slope > 15% Sand fractions > 85% Rock fragment content Depth to bedrock 20 to 40" pH > 6.5 or is NULL	0.00 0.00 0.00 0.64 1.00
Jobsis-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.61	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" Sand fractions 75-85% pH between 4.5 - 6.5	0.00 0.00 0.00 0.06 0.88
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	
112: Jobsis-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.61	Poor source Rock fragment content Slope > 15% Depth to bedrock 20 to 40" Sand fractions 75-85% pH between 4.5 - 6.5	0.00 0.00 0.00 0.06 0.88

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Whittell-----	25	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.03 0.14	Poor source Sand fractions > 85% Rock fragment content Slope > 15% Depth to bedrock 20 to 40" pH > 6.5 or is NULL	0.00 0.00 0.64 1.00
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	
113: Whittell-----	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.03 0.14	Poor source Slope > 15% Sand fractions > 85% Rock fragment content Depth to bedrock 20 to 40" pH > 6.5 or is NULL	0.00 0.00 0.00 0.64 1.00
Jobsis-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.61	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" Sand fractions 75-85% pH between 4.5 - 6.5	0.00 0.00 0.00 0.06 0.88
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	
120: Toiyabe-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.10	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content Sand fractions 75-85%	0.00 0.00 0.00 0.32
Corbett-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.07 0.54	Poor source Slope > 15% Sand fractions > 85% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.03 0.16

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	
121: Toiyabe-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.10	Poor source Depth to bedrock < 20" Rock fragment content Slope > 15% Sand fractions 75-85%	0.00 0.00 0.00 0.32
Corbett-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.07 0.10	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" Sand fractions 75-85%	0.00 0.03 0.16 0.28
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
122: Toiyabe-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.10	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content Sand fractions 75-85%	0.00 0.00 0.00 0.32
Corbett-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.07 0.10	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" Sand fractions 75-85%	0.00 0.03 0.16 0.28
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	
130: Sofgran-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.13 0.13	Poor source Slope > 15% Hard to reclaim Rock fragment content Sand fractions 75-85% pH between 4.5 - 6.5	0.00 0.00 0.00 0.04 0.88

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Klauspeak-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim Sand fractions 75-85%	0.00 0.00 0.00 0.04
Temo-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.61	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Sand fractions 75-85% pH > 6.5 or is NULL	0.00 0.00 0.00 0.01 1.00
131: Sofgran-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.13 0.13	Poor source Slope > 15% Hard to reclaim Rock fragment content Sand fractions 75-85% pH between 4.5 - 6.5	0.00 0.00 0.00 0.04 0.88
Temo-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.61	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Sand fractions 75-85% pH > 6.5 or is NULL	0.00 0.00 0.00 0.01 1.00
Shalgran-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Slope > 15% Sand fractions > 85% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
132: Sofgran-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.13 0.13	Poor source Slope > 15% Hard to reclaim Rock fragment content Sand fractions 75-85% pH between 4.5 - 6.5	0.00 0.00 0.00 0.04 0.88
Temo-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.61	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Sand fractions 75-85% pH > 6.5 or is NULL	0.00 0.00 0.00 0.01 1.00
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
140: Temo-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.61	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Sand fractions 75-85% pH > 6.5 or is NULL	0.00 0.00 0.00 0.01 1.00
Dagget-----	30	Fair source Bottom layer possible source Thickest layer possible source	0.03 0.03	Fair source Bottom layer is a possible source Thickest layer possible source	0.10 0.10	Poor source Slope > 15% Rock fragment content Hard to reclaim Sand fractions 75-85%	0.00 0.00 0.00 0.32
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	
150: Mottskel-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Sand fractions 75-85% Hard to reclaim Slope 8 to 12%	0.00 0.01 0.32 0.84

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
160: Hopeval-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.01 0.12	Poor source Saturation < 1' depth Hard to reclaim Rock fragment content	0.00 0.00 0.97
Hopeval-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.01 0.12	Poor source Saturation < 1' depth Hard to reclaim Rock fragment content	0.00 0.00 0.97
162: Corralval-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Saturation from 1 to 3'	0.00 0.00 0.00 0.88
Hopeval-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.01 0.12	Poor source Saturation < 1' depth Hard to reclaim Rock fragment content	0.00 0.00 0.97
170: Burnlake-----	60	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.31	Fair source Thickest layer possible source Bottom layer is a possible source	0.02 0.10	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Roadcat-----	25	Fair source Thickest layer possible source Bottom layer possible source	0.31 0.38	Fair source Bottom layer is a possible source Thickest layer possible source	0.13 0.13	Poor source Hard to reclaim Rock fragment content Slope > 15% Sand fractions 75-85%	0.00 0.00 0.00 0.04

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
171: Stumpatil-----	65	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer is a possible source Thickest layer possible source	0.03 0.06	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Morscour-----	20	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
172: Stumpatil-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer is a possible source Thickest layer possible source	0.03 0.06	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
173: Stumpatil-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer is a possible source Thickest layer possible source	0.03 0.06	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
174: Stumpatil-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer is a possible source Thickest layer possible source	0.03 0.06	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Sonorapass-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Depth to bedrock 20 to 40"	0.00 0.00 0.06

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Snowtell-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.05	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15% pH between 4.5 - 6.5	0.00 0.00 0.00 0.88
180: Shalgran-----	70	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Slope > 15% Sand fractions > 85% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00 0.00
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	
190: Hopeval-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.01 0.12	Poor source Saturation < 1' depth Hard to reclaim Rock fragment content	0.00 0.00 0.97
Hopeval-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.01 0.12	Poor source Saturation < 1' depth Hard to reclaim Rock fragment content	0.00 0.00 0.97
200: Cavebear-----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.38	Fair source Thickest layer possible source Bottom layer is a possible source	0.03 0.50	Poor source Sand fractions > 85% Hard to reclaim Rock fragment content Saturation from 1 to 3'	0.00 0.00 0.00 0.14
Hopeval-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.01 0.12	Poor source Saturation < 1' depth Hard to reclaim Rock fragment content	0.00 0.00 0.97

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Hopeval-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.01 0.12	Poor source Saturation < 1' depth Hard to reclaim Rock fragment content	0.00 0.00 0.97
210: Waterpeak-----	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Sand fractions > 85% Rock fragment content Hard to reclaim	0.00 0.00 0.00 0.32
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
211: Waterpeak-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Sand fractions > 85% Rock fragment content Hard to reclaim	0.00 0.00 0.00 0.32
Buggin-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.06	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15% Sand fractions 75-85%	0.00 0.00 0.00 0.04
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
212: Waterpeak-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Sand fractions > 85% Rock fragment content Slope > 15% Hard to reclaim	0.00 0.00 0.00 0.32

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Sofgran-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.13 0.13	Poor source Hard to reclaim Rock fragment content Slope > 15% Sand fractions 75-85% pH between 4.5 - 6.5	0.00 0.00 0.00 0.04 0.88
Temo-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.61	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15% Sand fractions 75-85% pH > 6.5 or is NULL	0.00 0.00 0.00 0.01 1.00
220: Hardtil-----	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.05	Poor source Saturation < 1' depth Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00 0.00
Alpineco-----	25	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Fair source Bottom layer is a possible source Thickest layer possible source	0.05 0.05	Poor source Hard to reclaim Rock fragment content Slope > 15% Saturation from 1 to 3'	0.00 0.00 0.00 0.89
Rock Outcrop-----	20	Not Rated		Not Rated		Not rated	
221: Hardtil-----	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.05	Poor source Slope > 15% Saturation < 1' depth Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Alpineco-----	25	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Fair source Bottom layer is a possible source Thickest layer possible source	0.05 0.05	Poor source Slope > 15% Hard to reclaim Rock fragment content Saturation from 1 to 3'	0.00 0.00 0.00 0.89
Rock Outcrop-----	20	Not Rated		Not Rated		Not rated	
222: Hardtil-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.05	Poor source Saturation < 1' depth Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00 0.00
Alpineco-----	25	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Fair source Bottom layer is a possible source Thickest layer possible source	0.05 0.05	Poor source Hard to reclaim Rock fragment content Slope > 15% Saturation from 1 to 3'	0.00 0.00 0.00 0.89
Rock Outcrop-----	20	Not Rated		Not Rated		Not rated	
230: Hawkinspeak-----	45	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68
Thieftridge-----	25	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Angelwhine-----	15	Fair source Thickest layer possible source Bottom layer possible source	0.12 0.38	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.02	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
231: Hawkinspeak-----	50	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68
Hawkinspeak-----	35	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68
232: Hawkinspeak-----	45	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Depth to bedrock 20 to 40"	0.00 0.00 0.68
Hawkinspeak-----	25	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Depth to bedrock 20 to 40"	0.00 0.00 0.68
Hawkridge-----	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
233: Angelwhine-----	30	Fair source Thickest layer possible source Bottom layer possible source	0.12 0.38	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.02	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Hawkinspeak-----	30	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68
Hawkridge-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
234: Hawkinspeak-----	40	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68
Hawkinspeak-----	25	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68
Thiefbridge-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
235: Hawkinspeak-----	35	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68
Hawkinspeak-----	30	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68
Angelwhine-----	20	Fair source Thickest layer possible source Bottom layer possible source	0.12 0.38	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.02	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
240: Granylith-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.07	Poor source Saturation < 1' depth Rock fragment content Depth to bedrock < 20" Slope > 15% Sand fractions 75-85%	0.00 0.00 0.00 0.00 0.04
Hargran-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.03 0.03	Poor source Rock fragment content Slope > 15% pH between 4.5 - 6.5 Saturation from 1 to 3' Depth to bedrock 20 to 40"	0.00 0.00 0.88 0.89 0.98
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
250: Florand-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.50
Lostridge-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.06	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH between 4.5 - 6.5	0.00 0.00 0.48 0.88
Fishsnooze-----	15	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH between 4.5 - 6.5	0.00 0.00 0.78 0.88
260: Hawkridge-----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Hawkinspeak-----	30	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68
Hawkinspeak-----	20	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
261: Hawkridge-----	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Lithnip-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.25	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Hawkinspeak-----	20	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68
262: Domehill-----	50	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Kiote-----	35	Fair source Thickest layer possible source Bottom layer possible source	0.06 0.56	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
270: Duco-----	40	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.06	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Clay 27 to 40%	0.00 0.00 0.00 0.98

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Smallcone-----	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.25	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.06	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" pH between 4.5 - 6.5	0.00 0.00 0.98
Cagle-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Clay > 40% Depth to bedrock 20 to 40"	0.00 0.00 0.00 0.42
271: Duco-----	40	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.06	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Clay 27 to 40%	0.00 0.00 0.00 0.98
Vetagrande-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Pinenut-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
280: Longcreek-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Devada-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Depth to bedrock < 20" Rock fragment content	0.00 0.00 0.12
290: Pernty-----	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Chen-----	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.19	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Rock fragment content Depth to bedrock < 20" Slope 8 to 12%	0.00 0.00 0.00 0.84
310: Bagval-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Rock fragment content	0.00 0.88
Bagval-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Rock fragment content	0.00 0.88
Wetbag-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Clay > 40%	0.00 0.00
Wetbag-----	10	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Clay > 40%	0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
320: Franktown-----	75	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.01	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Sand fractions < 75% or is NULL	0.00 0.00 0.00 1.00
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
330: Oest-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer not a source Thickest layer possible source	0.00 0.04	Poor source Rock fragment content Hard to reclaim	0.00 0.00
340: Aspocket-----	55	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Hard to reclaim	0.00 0.00 0.68
Aspocket-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Hard to reclaim	0.00 0.00 0.68
350: Leroman-----	45	Fair source Thickest layer possible source Bottom layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Depth to bedrock 20 to 40"	0.00 0.00 0.72
Chenhigh-----	20	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Clay > 40% Slope > 15%	0.00 0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Celeridge-----	10	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Dogbed-----	10	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
360: Monibasin-----	70	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer is a possible source Thickest layer possible source	0.03 0.03	Poor source Rock fragment content Hard to reclaim Slope 8 to 12%	0.00 0.12 0.91
Vermdig-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Saturation < 1' depth Rock fragment content Hard to reclaim	0.00 0.00 0.32
370: Celeridge-----	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Gerdog-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Loope-----	20	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Pinew-----	10	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.06	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
380: Joecut-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	 0.00 0.00 0.00
Celeridge-----	20	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Joecut-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim No saturated zone within 3' depth	0.00 0.00 0.00 1.00
Gerdog-----	10	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
381: Heenlake-----	15	Fair source Thickest layer possible source Bottom layer possible source	0.01 0.06	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.12
Loope-----	10	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Joecut-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.00
Joecut-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim No saturated zone within 3' depth	0.00 0.00 0.00 1.00
382: Joecut-----	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.00
Joecut-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim No saturated zone within 3' depth	0.00 0.00 0.00 1.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
390: Heenlake-----	40	Fair source Thickest layer possible source Bottom layer possible source	0.01 0.06	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.12
Loope-----	30	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Chenhigh-----	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Clay > 40% Slope > 15%	0.00 0.00 0.00 0.00
391: Heenlake-----	40	Fair source Thickest layer possible source Bottom layer possible source	0.01 0.06	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.12
Loope-----	25	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Dogbed-----	20	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
392: Heenlake-----	50	Fair source Thickest layer possible source Bottom layer possible source	0.01 0.06	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Depth to bedrock 20 to 40"	0.00 0.00 0.12
Loope-----	35	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
400: Pinew-----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.06	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Carshal-----	25	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Loope-----	15	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Celeridge-----	10	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
401: Pinew-----	75	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.06	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
410: Wolfcut-----	85	Fair source Thickest layer possible source Bottom layer possible source	0.25 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
420: Buggin-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.06	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Sand fractions 75-85%	0.00 0.00 0.00 0.04
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	
430: Newcone-----	75	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" pH between 4.5 - 6.5	0.00 0.00 0.00 0.50
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
440: Dogbed-----	35	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Celeridge-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Carshal-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Joecut-----	10	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Hard to reclaim No saturated zone within 3' depth	0.00 0.00 0.00 1.00
450: Carshal-----	55	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Loope-----	20	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
460: Toejom-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.57	Poor source Slope > 15% Sand fractions > 85% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Pimogran-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.52	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Sand fractions 75-85%	0.00 0.00 0.00 0.02
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
461: Toejom-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.57	Poor source Slope > 15% Sand fractions > 85% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00 0.00
Pimogran-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.52	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Sand fractions 75-85%	0.00 0.00 0.00 0.02
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
462: Toejom-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.57	Poor source Slope > 15% Sand fractions > 85% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00 0.00
Glenbrook-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.10	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content Sand fractions 75-85%	0.00 0.00 0.00 0.40
Pimogran-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.52	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Sand fractions 75-85%	0.00 0.00 0.00 0.02

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
470: Sumeadow-----	55	Fair source Thickest layer possible source Bottom layer possible source	0.06 0.12	Fair source Thickest layer possible source Bottom layer is a possible source	0.03 0.06	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Lostridge-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.06	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" pH between 4.5 - 6.5	0.00 0.00 0.48 0.88
471: Sumeadow-----	55	Fair source Thickest layer possible source Bottom layer possible source	0.06 0.12	Fair source Thickest layer possible source Bottom layer is a possible source	0.03 0.06	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Sumeadow-----	30	Fair source Thickest layer possible source Bottom layer possible source	0.06 0.12	Fair source Thickest layer possible source Bottom layer is a possible source	0.03 0.06	Poor source Hard to reclaim Rock fragment content Slope 8 to 12%	0.00 0.00 0.91
480: Aspetill-----	60	Fair source Bottom layer possible source Thickest layer possible source	0.29 0.29	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.04	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Aspetill-----	25	Fair source Bottom layer possible source Thickest layer possible source	0.29 0.29	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.04	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
481: Aspetill-----	50	Fair source Bottom layer possible source Thickest layer possible source	0.29 0.29	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.04	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Aspetill-----	35	Fair source Bottom layer possible source Thickest layer possible source	0.29 0.29	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.04	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
490: Cloudburst-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Murain-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
491: Cloudburst-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Murain-----	25	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Hardtil-----	15	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.05	Poor source Saturation < 1' depth Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
500: Chrisflat-----	90	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope 8 to 12%	0.00 0.00 0.91
510: Rubble Land-----	40	Not Rated		Not Rated		Not rated	
Lithnip-----	20	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.25	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	
Fishsnooze-----	10	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Depth to bedrock 20 to 40" pH between 4.5 - 6.5	0.00 0.00 0.78 0.88
511: Rock Outcrop-----	40	Not Rated		Not Rated		Not rated	
Snowtell-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.05	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15% pH between 4.5 - 6.5	0.00 0.00 0.00 0.88
Forsell-----	15	Fair source Thickest layer possible source Bottom layer possible source	0.25 0.38	Fair source Bottom layer is a possible source Thickest layer possible source	0.02 0.02	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
512: Rock Outcrop-----	50	Not Rated		Not Rated		Not rated	

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Snowtell-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.05	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" pH between 4.5 - 6.5	0.00 0.00 0.00 0.88
513: Rubble Land-----	40	Not Rated		Not Rated		Not rated	
Holdon-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	
520: Canfire-----	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Crispy-----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
530: Elaero-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.06

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Lockgate-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.09 0.13	Poor source Slope > 15% Hard to reclaim Rock fragment content Sand fractions 75-85%	0.00 0.00 0.00 0.06
Granhogany-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.13	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Sand fractions 75-85%	0.00 0.00 0.00 0.02
Granidry-----	10	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
531: Elaero-----	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Rock fragment content Depth to bedrock 20 to 40" Slope 8 to 12%	0.00 0.06 0.91
Elaero-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.06
532: Elaero-----	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.06
Granidry-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
540: Lostcannon, moist-----	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.06 0.06	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Lostcannon-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.06 0.06	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
560: Dunderberg-----	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.14	Fair source Bottom layer is a possible source Thickest layer possible source	0.04 0.04	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Dunderberg, warm-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.14	Fair source Bottom layer is a possible source Thickest layer possible source	0.04 0.04	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Conwayridge-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Dunderberg, moist-----	10	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.14	Fair source Bottom layer is a possible source Thickest layer possible source	0.04 0.04	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
561: Dunderberg-----	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.14	Fair source Bottom layer is a possible source Thickest layer possible source	0.04 0.04	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Dunderberg, warm-----	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.14	Fair source Bottom layer is a possible source Thickest layer possible source	0.04 0.04	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Dunderberg, moist-----	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.14	Fair source Bottom layer is a possible source Thickest layer possible source	0.04 0.04	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
570: Angelwhine-----	35	Fair source Thickest layer possible source Bottom layer possible source	0.12 0.38	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.02	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Hawkinspeak-----	25	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68
Hawkridge-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
580: Murain-----	50	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Shorthike-----	20	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Fair source Bottom layer is a possible source Thickest layer possible source	0.06 0.06	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Murain, moist-----	15	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
581: Murain-----	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Murain-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
590: Loope-----	40	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Heenlake-----	30	Fair source Thickest layer possible source Bottom layer possible source	0.01 0.06	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.12

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Carshal-----	15	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
591: Loope-----	40	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Heenlake-----	30	Fair source Thickest layer possible source Bottom layer possible source	0.01 0.06	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Depth to bedrock 20 to 40"	0.00 0.00 0.12
Celeridge-----	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
592: Loope-----	30	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Pinew-----	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.06	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Heenlake-----	25	Fair source Thickest layer possible source Bottom layer possible source	0.01 0.06	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.12
600: Snowtell-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.05	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15% pH between 4.5 - 6.5	0.00 0.00 0.00 0.88
Sonorapass-----	25	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Depth to bedrock 20 to 40"	0.00 0.00 0.06
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	
610: Forsell-----	50	Fair source Thickest layer possible source Bottom layer possible source	0.25 0.38	Fair source Bottom layer is a possible source Thickest layer possible source	0.02 0.02	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00
Snowtell-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.05	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15% pH between 4.5 - 6.5	0.00 0.00 0.00 0.88
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
611: Forsell-----	50	Fair source Thickest layer possible source Bottom layer possible source	0.25 0.38	Fair source Bottom layer is a possible source Thickest layer possible source	0.02 0.02	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Snowtell-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.05	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" pH between 4.5 - 6.5	0.00 0.00 0.00 0.88
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
620: Indian Creek-----	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.04	Poor source Clay > 40% Depth to pan 20 to 40" Rock fragment content	0.00 0.00 0.12
630: Olac-----	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.31	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Flex-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Duco-----	20	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.06	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Clay 27 to 40%	0.00 0.00 0.00 0.98
640: Koontz-----	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Nosrac-----	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
650: Shree-----	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.04	Poor source Hard to reclaim Rock fragment content Slope 8 to 12% Clay 27 to 40%	0.00 0.00 0.84 0.98
651: Shree-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.04	Poor source Hard to reclaim Rock fragment content Clay 27 to 40%	0.00 0.00 0.98
Holbrook-----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.25	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.04	Poor source Hard to reclaim Rock fragment content	0.00 0.00
660: Delhew-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer is a possible source Thickest layer possible source	0.06 0.13	Poor source Slope > 15% Hard to reclaim Rock fragment content Sand fractions 75-85%	0.00 0.00 0.00 0.03
Grandridge-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Bakscratch-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.05	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
670: Springmeyer-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Rock fragment content Hard to reclaim	0.12 0.50
671: Springmeyer-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim	0.00 0.50
Cassiro-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Clay > 40%	0.00 0.00 0.00 0.00
680: Rolldown-----	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope > 15%	0.00 0.00 0.00 0.00
Mountpatterson-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.29	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00 0.00
Rubble Land-----	20	Not Rated		Not Rated		Not rated	
700: Coldtree-----	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content pH between 4.5 - 6.5	0.00 0.00 0.00 0.98
Rubble Land-----	10	Not Rated		Not Rated		Not rated	

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
710: Bakscratch-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.05	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Grandridge-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
McTom-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Sand fractions 75-85% Depth to bedrock 20 to 40"	0.00 0.00 0.04 0.72
720: Nohelp-----	55	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.14	Fair source Bottom layer not a source Thickest layer possible source	0.00 0.03	Poor source Hard to reclaim Rock fragment content Slope > 15% Clay 27 to 40%	0.00 0.00 0.00 0.32
Joenchris-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim Slope > 15% Clay 27 to 40%	0.00 0.00 0.00 0.08
730: Burchflat-----	55	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Depth to bedrock 20 to 40"	0.00 0.00 0.00 0.82

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Loope-----	30	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope 8 to 12%	0.00 0.00 0.84
731: Burchflat-----	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.82
Celeridge-----	20	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Loope-----	20	Fair source Thickest layer possible source Bottom layer possible source	0.04 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
740: Jackflat-----	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim Slope > 15%	0.00 0.00 0.00
Grandridge-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
760: Thiefridge-----	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Thiefridge-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
770: Sweetmount-----	50	Fair source Thickest layer possible source Bottom layer possible source	0.16 0.50	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope > 15% Clay 27 to 40%	0.00 0.00 0.98
Hawkinspeak-----	20	Fair source Bottom layer possible source Thickest layer possible source	0.12 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.68
Hawkridge-----	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
780: Granhogany-----	65	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.13	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Sand fractions 75-85%	0.00 0.00 0.00 0.02

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Rock Outcrop-----	20	Not Rated		Not Rated		Not rated	
790: Dab-----	50	Fair source Bottom layer possible source Thickest layer possible source	0.25 0.25	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Dab-----	35	Fair source Bottom layer possible source Thickest layer possible source	0.25 0.25	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
791: Dab-----	45	Fair source Bottom layer possible source Thickest layer possible source	0.25 0.25	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Longday-----	25	Fair source Thickest layer possible source Bottom layer possible source	0.38 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00
Thiefridge-----	15	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
792: Dab-----	35	Fair source Bottom layer possible source Thickest layer possible source	0.25 0.25	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Slope > 15% Hard to reclaim Rock fragment content	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Aspocket-----	25	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Hard to reclaim	0.00 0.00 0.68
Hawkridge-----	25	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
800: Grandridge-----	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Delhew-----	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer is a possible source Thickest layer possible source	0.06 0.13	Poor source Slope > 15% Hard to reclaim Rock fragment content Sand fractions 75-85%	0.00 0.00 0.00 0.03
801: Grandridge-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Delhew-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer is a possible source Thickest layer possible source	0.06 0.13	Poor source Slope > 15% Hard to reclaim Rock fragment content Sand fractions 75-85%	0.00 0.00 0.00 0.03

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bullville-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.52
810: Corbett-----	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.07 0.10	Poor source Slope > 15% Rock fragment content Depth to bedrock 20 to 40" Sand fractions 75-85%	0.00 0.03 0.16 0.28
Toiyabe-----	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.10	Poor source Slope > 15% Depth to bedrock < 20" Rock fragment content Sand fractions 75-85%	0.00 0.00 0.00 0.32
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	
820: Freelpeak-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer is a possible source Thickest layer possible source	0.04 0.04	Poor source Slope > 15% Sand fractions > 85% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.00 0.82
Windyridge-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.12	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20" Sand fractions 75-85% pH between 4.5 - 6.5	0.00 0.00 0.00 0.06 0.95
Rock Outcrop-----	10	Not Rated		Not Rated		Not rated	

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
830: Windyridge-----	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.12	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15% Sand fractions 75-85% pH between 4.5 - 6.5	0.00 0.00 0.00 0.06 0.95
Freelpeak-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer is a possible source Thickest layer possible source	0.04 0.04	Poor source Slope > 15% Sand fractions > 85% Rock fragment content Depth to bedrock 20 to 40"	0.00 0.00 0.00 0.82
Rock Outcrop-----	15	Not Rated		Not Rated		Not rated	
840: Lavaspring-----	55	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.06	Poor source Saturation < 1' depth Hard to reclaim Rock fragment content	0.00 0.00 0.00
Trespass-----	25	Fair source Bottom layer possible source Thickest layer possible source	0.06 0.12	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.06	Poor source Hard to reclaim Rock fragment content Saturation from 1 to 3'	0.00 0.00 0.88
Lavaspring-----	10	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.06	Poor source Saturation < 1' depth Hard to reclaim Rock fragment content	0.00 0.00 0.00
850: Lunder-----	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Depth to pan < 20" Clay > 40% Rock fragment content	0.00 0.00 0.12

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
851: Lunder-----	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Depth to pan < 20" Clay > 40%	0.00 0.00
						Slope > 15% Rock fragment content	0.00 0.12
Leviathan-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer not a source Thickest layer possible source	0.00 0.04	Poor source Slope > 15% Hard to reclaim	0.00 0.00
						Rock fragment content Clay 27 to 40%	0.00 0.98
860: Hardnut-----	55	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Ocashe-----	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.38	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.02	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
870: Epvip-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Domehill-----	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ashflat-----	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Slope 8 to 12%	0.00 0.00 0.91
871: Halfash-----	50	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Domehill-----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
872: Epvip-----	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Vetash-----	25	Fair source Bottom layer not a source Thickest layer possible source	0.00 0.12	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.04	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.00
Epvip-----	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
873: Epvip-----	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Hardnut-----	35	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragment content Depth to bedrock < 20"	0.00 0.00 0.00
Vetash-----	15	Fair source Bottom layer not a source Thickest layer possible source	0.00 0.12	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.04	Poor source Slope > 15% Rock fragment content Hard to reclaim	0.00 0.00 0.00
880: Mopana-----	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan < 20" Clay > 40% Rock fragment content	0.00 0.00 0.50
890: Masonic-----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Depth to bedrock 20 to 40"	0.00 0.00 0.06
Epvip-----	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope > 15%	0.00 0.00 0.00
Domehill-----	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer possible source	0.00 0.12	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Depth to bedrock < 20" Slope 8 to 12%	0.00 0.00 0.91
900: Brokenhoe-----	60	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Rock fragment content Slope > 15% Depth to pan 20 to 40" Clay 27 to 40%	0.00 0.00 0.00 0.08

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Fisherdig-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Poor source Depth to pan < 20" Rock fragment content Clay > 40%	0.00 0.00 0.00
910: Indian Creek-----	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.04	Poor source Clay > 40% Depth to pan 20 to 40" Rock fragment content	0.00 0.00 0.12
Haybourne-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer is a possible source Thickest layer possible source	0.03 0.04	Fair source Rock fragment content Hard to reclaim	0.03 0.98
920: Aquic Torrifluvents-----	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Thickest layer not a source Bottom layer not a source	0.00 0.00	Poor source Hard to reclaim Rock fragment content Sand fractions 75-85% No saturated zone within 3' depth	0.00 0.00 0.04 1.00
Conway-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer possible source Bottom layer is a possible source	0.04 0.06	Poor source Rock fragment content Saturation from 1 to 3' Hard to reclaim	0.00 0.76 0.82
Torrifluventic Haploxerolls-----	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Rock fragment content Hard to reclaim Sand fractions 75-85%	0.00 0.00 0.04
930: Lavaspring-----	60	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.06	Poor source Hard to reclaim Rock fragment content	0.00 0.00

TABLE 19.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Lavaspring-----	25	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.06	Poor source Saturation < 1' depth Hard to reclaim Rock fragment content	0.00 0.00 0.00
960: Rose Creek-----	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Thickest layer not a source Bottom layer is a possible source	0.00 0.03	Fair source Rock fragment content Saturation from 1 to 3' SAR 4 to 13	0.72 0.76 0.78
998: Dumps-----	60	Not Rated		Not Rated		Not rated	
Pits-----	30	Not Rated		Not Rated		Not rated	
999: Water-----	100	Not Rated		Not Rated		Not rated	

The interpretation for gravel source evaluates coarse fragments greater than .2 inches in size in the bottom layer or in the thickest layer of the soil.

The interpretation for sand source evaluates the amount of sand and fine gravels in the thickest layer or in the bottom layer of the soil. Organic soil layers with a Unified engineering class for peat (PT) are also evaluated.

The interpretation for topsoil source evaluates the following soil properties at various depths: calcium carbonates, clay amount, soil bulk density, sand amount, soil wetness, coarse fragments .2 to 3 inches in size, fragments greater than 3 inches in size, organic matter content (OM), sodium content expressed as the sodium adsorption ratio (SAR), salinity expressed as dS/m of electrical conductivity (EC), depth to bedrock, slope and soil pH.

TABLE 20.--Construction Materials (Part 2)

Pacific Southwest MLRA Office Interpretations

The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The closer the value is to 0, the greater the potential limitation.

Values of 0 are absolute limitations based on the soil property criteria used to develop the interpretation. Values closer to 1.0 have less of a limitation. Limiting features with values = 1 have absolutely no limitation and are not shown in this report. Rating classes are determined by the most limiting value.

Fine earth fractions and fragment limiting features are reported on a weight basis.

A brief rating criteria summary and abbreviations are listed on the last page of this report.

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
100: Lithnip-----	40	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Hawkinspeak-----	30	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	15	Not rated		Not rated	
101: Lithnip, moist-----	40	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	25	Not rated		Not rated	
Fishsnooze-----	20	Poor source AWC < 3" to 60" depth Fragments 3-10" are 25 to 50% pH is between 4 and 6.5 above 40" OM is .5 to 1%	0.00 0.37 0.50 0.50	Poor source Depth to bedrock < 40" Slopes > 25% Fragments >3" are 25 to 50%	0.00 0.00 0.68
102: Lithnip-----	40	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Rock Outcrop-----	25	Not rated		Not rated	
Fishsnooze-----	20	Poor source AWC < 3" to 60" depth Fragments 3-10" are 25 to 50% pH is between 4 and 6.5 above 40" OM is .5 to 1%	0.00 0.37 0.50 0.50	Poor source Depth to bedrock < 40" Slopes 15 to 25% Fragments >3" are 25 to 50%	0.00 0.68 0.68

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
103:					
Lithnip-----	40	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes > 25%	0.00
Meiss-----	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		pH is between 4 and 6.5 above 40"	0.50	Slopes > 25%	0.00
Hawkinspeak-----	15	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.02	Depth to bedrock < 40"	0.00
		Fragments >10" are < 5% or NULL	1.00	Slopes > 25%	0.00
110:					
Jobsis-----	45	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes 15 to 25%	0.68
		Sand fractions 75 to 85%	0.15		
		pH is between 4 and 6.5 above 40"	0.50		
		Fragments >10" are 5-15%	0.97		
Whittell-----	25	Poor source		Poor source	
		Sand fractions > 85%	0.00	Depth to bedrock < 40"	0.00
		WEG = 1 or 2	0.00	Slopes 15 to 25%	0.68
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.61		
		OM is .5 to 1%	0.68		
		Fragments 3-10" are 25 to 50%	0.98		
Rock Outcrop-----	15	Not rated		Not rated	
111:					
Whittell-----	45	Poor source		Poor source	
		Sand fractions > 85%	0.00	Depth to bedrock < 40"	0.00
		WEG = 1 or 2	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00		
		Fragments >10" are > 15%	0.00		
		pH is between 4 and 6.5 above 40"	0.61		
		OM is .5 to 1%	0.68		
		Fragments 3-10" are 25 to 50%	0.98		

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Jobsis-----	25	Poor source AWC < 3" to 60" depth OM < .5% Sand fractions 75 to 85% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.00 0.00 0.15 0.50 0.97	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	15	Not rated		Not rated	
112: Jobsis-----	45	Poor source AWC < 3" to 60" depth OM < .5% Sand fractions 75 to 85% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.00 0.00 0.15 0.50 0.97	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Whittell-----	25	Poor source Sand fractions > 85% WEG = 1 or 2 AWC < 3" to 60" depth Fragments >10" are > 15% pH is between 4 and 6.5 above 40" OM is .5 to 1% Fragments 3-10" are 25 to 50%	0.00 0.00 0.00 0.00 0.61 0.68 0.98	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Rock Outcrop-----	15	Not rated		Not rated	
113: Whittell-----	45	Poor source Sand fractions > 85% WEG = 1 or 2 AWC < 3" to 60" depth Fragments >10" are > 15% pH is between 4 and 6.5 above 40" OM is .5 to 1% Fragments 3-10" are 25 to 50%	0.00 0.00 0.00 0.00 0.61 0.68 0.98	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Jobsis-----	25	Poor source AWC < 3" to 60" depth OM < .5% Sand fractions 75 to 85% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.00 0.00 0.15 0.50 0.97	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	15	Not rated		Not rated	

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
120: Toiyabe-----	45	Poor source AWC < 3" to 60" depth Fragments >10" are > 15% Sand fractions 75 to 85%	0.00 0.00 0.68	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Corbett-----	25	Poor source Sand fractions > 85% AWC < 3" to 60" depth Fragments >10" are > 15% OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.00 0.00 0.00 0.50 0.95	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	15	Not rated		Not rated	
121: Toiyabe-----	45	Poor source AWC < 3" to 60" depth Fragments >10" are > 15% Sand fractions 75 to 85%	0.00 0.00 0.68	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Corbett-----	35	Poor source AWC < 3" to 60" depth Fragments >10" are > 15% OM is .5 to 1% Sand fractions 75 to 85% pH is between 4 and 6.5 above 40"	0.00 0.00 0.50 0.61 0.95	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Rock Outcrop-----	10	Not rated		Not rated	
122: Toiyabe-----	50	Poor source AWC < 3" to 60" depth Fragments >10" are > 15% Sand fractions 75 to 85%	0.00 0.00 0.68	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Corbett-----	20	Poor source AWC < 3" to 60" depth Fragments >10" are > 15% OM is .5 to 1% Sand fractions 75 to 85% pH is between 4 and 6.5 above 40"	0.00 0.00 0.50 0.61 0.95	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	15	Not rated		Not rated	

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
130: Sofgran-----	40	Poor source OM < .5% AWC < 3" to 60" depth Sand fractions 75 to 85% pH is between 4 and 6.5 above 40" Fragments >10" are < 5% or NULL	0.00 0.00 0.10 0.32 1.00	Poor source Slopes > 25%	0.00
Klauspeak-----	30	Poor source WEG = 1 or 2 Fragments >10" are 5-15% AWC 3 - 6" to 60" depth Sand fractions 75 to 85% OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.00 0.03 0.09 0.10 0.50 0.68	Poor source Slopes > 25%	0.00
Temo-----	15	Poor source AWC < 3" to 60" depth Sand fractions 75 to 85% OM is .5 to 1% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.00 0.02 0.50 0.61 0.98	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
131: Sofgran-----	40	Poor source OM < .5% AWC < 3" to 60" depth Sand fractions 75 to 85% pH is between 4 and 6.5 above 40" Fragments >10" are < 5% or NULL	0.00 0.00 0.10 0.32 1.00	Poor source Slopes > 25%	0.00
Temo-----	25	Poor source AWC < 3" to 60" depth Sand fractions 75 to 85% OM is .5 to 1% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.00 0.02 0.50 0.61 0.98	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Shalgran-----	20	Poor source Sand fractions > 85% WEG = 1 or 2 Fragments >10" are > 15% AWC < 3" to 60" depth OM < .5% pH is between 4 and 6.5 above 40"	0.00 0.00 0.00 0.00 0.00 0.84	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
132: Sofgran-----	50	Poor source OM < .5% AWC < 3" to 60" depth Sand fractions 75 to 85% pH is between 4 and 6.5 above 40" Fragments >10" are < 5% or NULL	0.00 0.00 0.10 0.32 1.00	Poor source Slopes > 25%	0.00
Temo-----	25	Poor source AWC < 3" to 60" depth Sand fractions 75 to 85% OM is .5 to 1% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.00 0.02 0.50 0.61 0.98	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	10	Not rated		Not rated	
140: Temo-----	40	Poor source AWC < 3" to 60" depth Sand fractions 75 to 85% OM is .5 to 1% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.00 0.02 0.50 0.61 0.98	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Dagget-----	30	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15% Sand fractions 75 to 85% pH is between 4 and 6.5 above 40"	0.00 0.18 0.68 0.92	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.01
Rock Outcrop-----	15	Not rated		Not rated	
150: Mottskel-----	85	Poor source Fragments >10" are > 15% OM < .5% Sand fractions 75 to 85% AWC 3 - 6" to 60" depth	0.00 0.00 0.02 0.09	Good source	
160: Hopeval-----	50	Fair source K-factor .10 -.35 pH is between 4 and 6.5 above 40"	0.37 0.95	Poor source Saturation < 1' depth	0.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Hopeval-----	35	Fair source K-factor .10 -.35 pH is between 4 and 6.5 above 40"	0.37 0.95	Poor source Saturation < 1' depth	0.00
162: Corralval-----	45	Fair source AWC 3 - 6" to 60" depth pH is between 4 and 6.5 above 40"	0.91 0.95	Fair source Saturation from 1 to 3'	0.88
Hopeval-----	45	Fair source K-factor .10 -.35 pH is between 4 and 6.5 above 40"	0.37 0.95	Poor source Saturation < 1' depth	0.00
170: Burnlake-----	60	Fair source AWC 3 - 6" to 60" depth Fragments >10" are 5-15%	0.00 0.97	Fair source Slopes 15 to 25%	0.68
Roadcat-----	25	Poor source AWC < 3" to 60" depth OM < .5% Sand fractions 75 to 85% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.00 0.00 0.10 0.95 0.97	Fair source Slopes 15 to 25%	0.98
171: Stumpatil-----	65	Fair source AWC 3 - 6" to 60" depth OM is .5 to 1% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.50 0.50 0.68 0.80	Fair source Slopes 15 to 25%	0.68
Morscour-----	20	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.82	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
172: Stumpatil-----	85	Fair source AWC 3 - 6" to 60" depth OM is .5 to 1% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.50 0.50 0.68 0.80	Poor source Slopes > 25%	0.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
173: Stumpatil-----	85	Fair source AWC 3 - 6" to 60" depth OM is .5 to 1% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.50 0.50 0.68 0.80	Fair source Slopes 15 to 25%	0.68
174: Stumpatil-----	35	Fair source AWC 3 - 6" to 60" depth OM is .5 to 1% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.50 0.50 0.68 0.80	Fair source Slopes 15 to 25%	0.68
Sonorapass-----	30	Poor source AWC < 3" to 60" depth pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.00 0.74 0.94	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Snowtell-----	20	Poor source AWC < 3" to 60" depth pH is between 4 and 6.5 above 40"	0.00 0.50	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
180: Shalgran-----	70	Poor source Sand fractions > 85% WEG = 1 or 2 Fragments >10" are > 15% AWC < 3" to 60" depth OM < .5% pH is between 4 and 6.5 above 40"	0.00 0.00 0.00 0.00 0.00 0.84	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	15	Not rated		Not rated	
190: Hopeval-----	50	Fair source K-factor .10 -.35 pH is between 4 and 6.5 above 40"	0.37 0.95	Poor source Saturation < 1' depth	0.00
Hopeval-----	35	Fair source K-factor .10 -.35 pH is between 4 and 6.5 above 40"	0.37 0.95	Poor source Saturation < 1' depth	0.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
200:					
Cavebear-----	35	Poor source Sand fractions > 85% OM < .5% AWC 3 - 6" to 60" depth pH is between 4 and 6.5 above 40"	0.00 0.00 0.38 0.95	Fair source Saturation from 1 to 3'	0.14
Hopeval-----	25	Fair source K-factor .10 -.35 pH is between 4 and 6.5 above 40"	0.37 0.95	Poor source Saturation < 1' depth	0.00
Hopeval-----	20	Fair source K-factor .10 -.35 pH is between 4 and 6.5 above 40"	0.37 0.95	Poor source Saturation < 1' depth	0.00
210:					
Waterpeak-----	80	Poor source Sand fractions > 85% WEG = 1 or 2 Fragments >10" are > 15% AWC 3 - 6" to 60" depth	0.00 0.00 0.00 0.77	Poor source Slopes > 25%	0.00
Rock Outcrop-----	10	Not rated		Not rated	
211:					
Waterpeak-----	50	Poor source Sand fractions > 85% WEG = 1 or 2 Fragments >10" are > 15% AWC 3 - 6" to 60" depth	0.00 0.00 0.00 0.77	Poor source Slopes > 25%	0.00
Buggin-----	25	Poor source AWC < 3" to 60" depth Fragments >10" are > 15% Sand fractions 75 to 85% pH is between 4 and 6.5 above 40"	0.00 0.00 0.10 0.95	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Rock Outcrop-----	10	Not rated		Not rated	
212:					
Waterpeak-----	45	Poor source Sand fractions > 85% WEG = 1 or 2 Fragments >10" are > 15% AWC 3 - 6" to 60" depth	0.00 0.00 0.00 0.77	Fair source Slopes 15 to 25%	0.92

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Sofgran-----	25	Poor source OM < .5% AWC < 3" to 60" depth Sand fractions 75 to 85% pH is between 4 and 6.5 above 40" Fragments >10" are < 5% or NULL	0.00 0.00 0.10 0.32 1.00	Fair source Slopes 15 to 25%	0.68
Temo-----	15	Poor source AWC < 3" to 60" depth Sand fractions 75 to 85% OM is .5 to 1% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.00 0.02 0.50 0.61 0.98	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
220: Hardtil-----	45	Poor source AWC < 3" to 60" depth OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.00 0.50 0.95	Poor source Depth to bedrock < 40" Saturation < 1' depth Slopes 15 to 25%	0.00 0.00 0.68
Alpineco-----	25	Poor source Fragments >10" are > 15% OM < .5% AWC 3 - 6" to 60" depth pH is between 4 and 6.5 above 40"	0.00 0.00 0.93 0.95	Fair source Depth to bedrock 40 to 60" Slopes 15 to 25% Saturation from 1 to 3'	0.46 0.68 0.89
Rock Outcrop-----	20	Not rated		Not rated	
221: Hardtil-----	45	Poor source AWC < 3" to 60" depth OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.00 0.50 0.95	Poor source Depth to bedrock < 40" Saturation < 1' depth Slopes > 25%	0.00 0.00 0.00
Alpineco-----	25	Poor source Fragments >10" are > 15% OM < .5% AWC 3 - 6" to 60" depth pH is between 4 and 6.5 above 40"	0.00 0.00 0.93 0.95	Poor source Slopes > 25% Depth to bedrock 40 to 60" Saturation from 1 to 3'	0.00 0.46 0.89
Rock Outcrop-----	20	Not rated		Not rated	
222: Hardtil-----	40	Poor source AWC < 3" to 60" depth OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.00 0.50 0.95	Poor source Depth to bedrock < 40" Saturation < 1' depth Slopes 15 to 25%	0.00 0.00 0.68

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Alpineco-----	25	Poor source Fragments >10" are > 15% OM < .5% AWC 3 - 6" to 60" depth pH is between 4 and 6.5 above 40"	0.00 0.00 0.93 0.95	Fair source Depth to bedrock 40 to 60" Slopes 15 to 25% Saturation from 1 to 3'	0.46 0.68 0.89
Rock Outcrop-----	20	Not rated		Not rated	
230: Hawkinspeak-----	45	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Thief ridge-----	25	Poor source AWC < 3" to 60" depth Fragments 3-10" are 25 to 50% pH is between 4 and 6.5 above 40"	0.00 0.23 0.97	Poor source Depth to bedrock < 40" Slopes 15 to 25% Fragments >3" are 25 to 50%	0.00 0.68 1.00
Angelwhine-----	15	Fair source OM is .5 to 1%	0.50	Poor source Slopes > 25%	0.00
231: Hawkinspeak-----	50	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Hawkinspeak-----	35	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
232: Hawkinspeak-----	45	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Hawkinspeak-----	25	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Hawkridge-----	15	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.91	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.92
233: Angelwhine-----	30	Fair source OM is .5 to 1%	0.50	Poor source Slopes > 25%	0.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Hawkinspeak-----	30	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Hawkridge-----	25	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.91	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.92
234: Hawkinspeak-----	40	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Hawkinspeak-----	25	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Thief ridge-----	20	Poor source AWC < 3" to 60" depth Fragments 3-10" are 25 to 50% pH is between 4 and 6.5 above 40"	0.00 0.23 0.97	Poor source Depth to bedrock < 40" Slopes 15 to 25% Fragments >3" are 25 to 50%	0.00 0.92 1.00
235: Hawkinspeak-----	35	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Hawkinspeak-----	30	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Angelwhine-----	20	Fair source OM is .5 to 1%	0.50	Poor source Slopes > 25%	0.00
240: Granylith-----	45	Poor source AWC < 3" to 60" depth Sand fractions 75 to 85% OM is .5 to 1% pH is between 4 and 6.5 above 40" Fragments >10" are < 5% or NULL	0.00 0.10 0.50 0.95 1.00	Poor source Depth to bedrock < 40" Saturation < 1' depth Slopes 15 to 25%	0.00 0.00 0.68
Hargran-----	25	Poor source Fragments >10" are > 15% pH is between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.50 0.68	Poor source Depth to bedrock < 40" Slopes 15 to 25% Saturation from 1 to 3'	0.00 0.68 0.89

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Rock Outcrop-----	15	Not rated		Not rated	
250: Florand-----	40	Poor source OM < .5% pH is between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.50 0.87	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.29
Lostridge-----	30	Fair source AWC 3 - 6" to 60" depth pH is between 4 and 6.5 above 40" OM is .5 to 1%	0.01 0.50 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Fishsnooze-----	15	Poor source AWC < 3" to 60" depth Fragments 3-10" are 25 to 50% pH is between 4 and 6.5 above 40" OM is .5 to 1% Fragments >10" are < 5% or NULL	0.00 0.37 0.50 0.50 1.00	Poor source Depth to bedrock < 40" Slopes > 25% Fragments >3" are 25 to 50%	0.00 0.00 0.68
260: HawkrIDGE-----	35	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Hawkinspeak-----	30	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Hawkinspeak-----	20	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
261: HawkrIDGE-----	30	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.91	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Lithnip-----	25	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Hawkinspeak-----	20	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
262: Domehill-----	50	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" LEP 3 to 9 Slopes 15 to 25%	0.00 0.75 0.92
Kiote-----	35	Fair source OM is .5 to 1%	0.50	Poor source Slopes > 25%	0.00
270: Duco-----	40	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15% Clay 27 to 40%	0.00 0.36 0.98	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Smallcone-----	30	Poor source AWC < 3" to 60" depth OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.00 0.50 0.54	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Cagle-----	15	Poor source Clay > 40% AWC 3 - 6" to 60" depth	0.00 0.27	Poor source Depth to bedrock < 40" LEP 3 to 9 Slopes 15 to 25%	0.00 0.25 0.50
271: Duco-----	40	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15% Clay 27 to 40%	0.00 0.36 0.98	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Vetagrande-----	25	Fair source AWC 3 - 6" to 60" depth	0.56	Poor source Slopes > 25%	0.00
Pinenut-----	20	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
280: Longcreek-----	50	Poor source Clay > 40% AWC < 3" to 60" depth OM is .5 to 1% Fragments >10" are 5-15% Fragments 3-10" are 25 to 50%	0.00 0.00 0.50 0.85 0.85	Poor source Depth to bedrock < 40" LEP 3 to 9	0.00 0.75

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Devada-----	35	Poor source Clay > 40% AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.00 0.67	Poor source Depth to bedrock < 40" LEP 3 to 9	0.00 0.25
290: Pernty-----	55	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" LEP 3 to 9	0.00 0.75
Chen-----	30	Poor source Clay > 40% AWC < 3" to 60" depth	0.00 0.00	Poor source Depth to bedrock < 40" LEP 3 to 9	0.00 0.75
310: Bagval-----	40	Poor source Clay > 40%	0.00	Fair source LEP 3 to 9	0.25
Bagval-----	25	Poor source Clay > 40%	0.00	Fair source LEP 3 to 9	0.25
Wetbag-----	15	Poor source Clay > 40%	0.00	Poor source Saturation < 1' depth LEP 3 to 9	0.00 0.25
Wetbag-----	10	Poor source WEG = 1 or 2 Clay > 40%	0.00 0.00	Poor source Saturation < 1' depth LEP 3 to 9	0.00 0.25
320: Franktown-----	75	Poor source AWC < 3" to 60" depth pH is between 4 and 6.5 above 40"	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	10	Not rated		Not rated	
330: Oest-----	85	Poor source Fragments >10" are > 15% OM is .5 to 1% AWC 3 - 6" to 60" depth	0.00 0.50 0.94	Good source	
340: Aspocket-----	55	Poor source Fragments >10" are > 15%	0.00	Fair source Depth to bedrock 40 to 60" Slopes 15 to 25%	0.87 0.92

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Aspocket-----	30	Poor source Fragments >10" are > 15%	0.00	Fair source Depth to bedrock 40 to 60" Slopes 15 to 25%	0.87 0.92
350: Leroman-----	45	Fair source AWC 3 - 6" to 60" depth Fragments >10" are 5-15%	0.03 0.99	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Chenhigh-----	20	Poor source AWC < 3" to 60" depth Clay > 40% OM is .5 to 1%	0.00 0.00 0.50	Poor source Depth to bedrock < 40" LEP 3 to 9 Slopes 15 to 25%	0.00 0.25 0.92
Celeridge-----	10	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.03	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.92
Dogbed-----	10	Good source		Fair source Slopes 15 to 25%	0.12
360: Monibasin-----	70	Poor source Fragments >10" are > 15%	0.00	Good source	
Vermdig-----	15	Fair source OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.50 0.95	Poor source Saturation < 1' depth LEP 3 to 9	0.00 0.75
370: Celeridge-----	30	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.03	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Gerdog-----	25	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.96	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Loope-----	20	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Pinew-----	10	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
380:					
Joecut-----	40	Fair source pH is between 4 and 6.5 above 40" OM is .5 to 1%	0.46 0.50	Poor source Slopes > 25% LEP 3 to 9	0.00 0.79
Celeridge-----	20	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.03	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.92
Joecut-----	15	Poor source WEG = 1 or 2 OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.00 0.50 0.95	Poor source Slopes > 25% LEP 3 to 9 No saturated zone within 3' depth	0.00 0.79 1.00
Gerdog-----	10	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.96	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.92
381:					
Heenlake-----	15	Fair source AWC 3 - 6" to 60" depth Fragments >10" are 5-15%	0.15 0.21	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Loope-----	10	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Joecut-----	30	Fair source OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.50 0.95	Poor source Slopes > 25% LEP 3 to 9	0.00 0.79
Joecut-----	30	Poor source WEG = 1 or 2 OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.00 0.50 0.95	Poor source Slopes > 25% LEP 3 to 9 No saturated zone within 3' depth	0.00 0.79 1.00
382:					
Joecut-----	55	Fair source OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.50 0.95	Poor source Slopes > 25% LEP 3 to 9	0.00 0.79
Joecut-----	30	Poor source WEG = 1 or 2 OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.00 0.50 0.95	Poor source Slopes > 25% LEP 3 to 9 No saturated zone within 3' depth	0.00 0.79 1.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
390: Heenlake-----	40	Fair source Fragments >10" are 5-15% AWC 3 - 6" to 60" depth	0.07 0.15	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Loope-----	30	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Chenhigh-----	15	Poor source AWC < 3" to 60" depth Clay > 40% OM is .5 to 1%	0.00 0.00 0.50	Poor source Depth to bedrock < 40" LEP 3 to 9 Slopes 15 to 25%	0.00 0.25 0.92
391: Heenlake-----	40	Fair source AWC 3 - 6" to 60" depth Fragments >10" are 5-15%	0.15 0.21	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Loope-----	25	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Dogbed-----	20	Good source		Poor source Slopes > 25%	0.00
392: Heenlake-----	50	Fair source AWC 3 - 6" to 60" depth Fragments >10" are 5-15%	0.15 0.21	Poor source Depth to bedrock < 40" Slopes 15 to 25% LEP 3 to 9	0.00 0.68 0.75
Loope-----	35	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
400: Pinew-----	35	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Carshal-----	25	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Loope-----	15	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Celeridge-----	10	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.03	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
401: Pinew-----	75	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Rock Outcrop-----	10	Not rated		Not rated	
410: Wolfcut-----	85	Poor source WEG = 1 or 2 Fragments >10" are 5-15% OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.00 0.22 0.50 0.95	Fair source Slopes 15 to 25%	0.68
420: Buggin-----	75	Poor source AWC < 3" to 60" depth Fragments >10" are > 15% Sand fractions 75 to 85% pH is between 4 and 6.5 above 40"	0.00 0.00 0.10 0.95	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	15	Not rated		Not rated	
430: Newcone-----	75	Poor source AWC < 3" to 60" depth pH is between 4 and 6.5 above 40" OM is .5 to 1%	0.00 0.50 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	10	Not rated		Not rated	
440: Dogbed-----	35	Good source		Poor source Slopes > 25%	0.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Celeridge-----	25	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.03	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Carshal-----	20	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Joecut-----	10	Poor source WEG = 1 or 2 OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.00 0.50 0.95	Poor source Slopes > 25% LEP 3 to 9 No saturated zone within 3' depth	0.00 0.79 1.00
450: Carshal-----	55	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Loope-----	20	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	10	Not rated		Not rated	
460: Toejom-----	45	Poor source Sand fractions > 85% WEG = 1 or 2 AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.00 0.00 0.93	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Pimogran-----	30	Poor source AWC < 3" to 60" depth Sand fractions 75 to 85%	0.00 0.05	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	10	Not rated		Not rated	
461: Toejom-----	40	Poor source Sand fractions > 85% WEG = 1 or 2 AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.00 0.00 0.93	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Pimogran-----	35	Poor source AWC < 3" to 60" depth Sand fractions 75 to 85%	0.00 0.05	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	10	Not rated		Not rated	
462: Toejom-----	40	Poor source Sand fractions > 85% WEG = 1 or 2 AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.00 0.00 0.93	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Glenbrook-----	30	Poor source AWC < 3" to 60" depth OM < .5% Sand fractions 75 to 85%	0.00 0.00 0.78	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Pimogran-----	20	Poor source AWC < 3" to 60" depth Sand fractions 75 to 85%	0.00 0.05	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
470: Sumeadow-----	55	Poor source WEG = 1 or 2 OM is .5 to 1% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15% Fragments 3-10" < 25% or NULL data	0.00 0.50 0.68 0.96 0.99	Poor source Slopes > 25%	0.00
Lostridge-----	30	Fair source AWC 3 - 6" to 60" depth pH is between 4 and 6.5 above 40" OM is .5 to 1%	0.01 0.50 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
471: Sumeadow-----	55	Poor source WEG = 1 or 2 OM is .5 to 1% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15% Fragments 3-10" < 25% or NULL data	0.00 0.50 0.68 0.96 0.99	Poor source Slopes > 25%	0.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Sumeadow-----	30	Poor source WEG = 1 or 2 OM is .5 to 1% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15% Fragments 3-10" < 25% or NULL data	0.00 0.50 0.68 0.96 0.99	Good source	
480: Aspetill-----	60	Fair source Fragments >10" are 5-15% Fragments 3-10" are 25 to 50%	0.94 0.95	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.89 0.92
Aspetill-----	25	Fair source Fragments >10" are 5-15% Fragments 3-10" are 25 to 50%	0.94 0.95	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.89 0.92
481: Aspetill-----	50	Fair source Fragments >10" are 5-15% Fragments 3-10" are 25 to 50%	0.94 0.95	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.89 0.92
Aspetill-----	35	Fair source Fragments >10" are 5-15% Fragments 3-10" are 25 to 50%	0.70 0.93	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.83 0.92
490: Cloudburst-----	50	Poor source Fragments >10" are > 15% OM is .5 to 1% Fragments 3-10" are 25 to 50%	0.00 0.50 0.61	Fair source Slopes 15 to 25% Fragments >3" are 25 to 50%	0.68 0.74
Murain-----	35	Poor source Fragments >10" are > 15% Fragments 3-10" are 25 to 50% OM is .5 to 1%	0.00 0.21 0.50	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.29 0.68
491: Cloudburst-----	45	Poor source Fragments >10" are > 15% OM is .5 to 1% Fragments 3-10" are 25 to 50%	0.00 0.50 0.61	Poor source Slopes > 25% Fragments >3" are 25 to 50%	0.00 0.74
Murain-----	25	Poor source Fragments >10" are > 15% Fragments 3-10" are 25 to 50% OM is .5 to 1%	0.00 0.21 0.50	Poor source Slopes > 25% Fragments >3" are 25 to 50%	0.00 0.29

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Hardtil-----	15	Poor source AWC < 3" to 60" depth OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.00 0.50 0.95	Poor source Depth to bedrock < 40" Saturation < 1' depth Slopes 15 to 25%	0.00 0.00 0.68
500: Chrisflat-----	90	Poor source Fragments >10" are > 15%	0.00	Good source	
510: Rubble Land-----	40	Not rated		Not rated	
Lithnip-----	20	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Rock Outcrop-----	15	Not rated		Not rated	
Fishsnooze-----	10	Poor source AWC < 3" to 60" depth Fragments 3-10" are 25 to 50% pH is between 4 and 6.5 above 40" OM is .5 to 1% Fragments >10" are < 5% or NULL	0.00 0.37 0.50 0.50 1.00	Poor source Depth to bedrock < 40" Slopes > 25% Fragments >3" are 25 to 50%	0.00 0.00 0.68
511: Rock Outcrop-----	40	Not rated		Not rated	
Snowtell-----	30	Poor source AWC < 3" to 60" depth pH is between 4 and 6.5 above 40"	0.00 0.50	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Forsell-----	15	Poor source Fragments >10" are > 15% OM is .5 to 1% pH is between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.50 0.68 0.86	Fair source Slopes 15 to 25%	0.68
512: Rock Outcrop-----	50	Not rated		Not rated	
Snowtell-----	40	Poor source AWC < 3" to 60" depth pH is between 4 and 6.5 above 40"	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
513: Rubble Land-----	40	Not rated		Not rated	

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Holdon-----	30	Poor source AWC < 3" to 60" depth Fragments 3-10" > 50% OM < .5% Fragments >10" are 5-15%	0.00 0.00 0.00 0.94	Poor source Slopes > 25% Fragments >3" > 50% Depth to bedrock 40 to 60"	0.00 0.00 0.29
Rock Outcrop-----	15	Not rated		Not rated	
520: Canfire-----	40	Poor source AWC < 3" to 60" depth OM is .5 to 1% Fragments >10" are < 5% or NULL	0.00 0.50 0.99	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Crispy-----	35	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Rock Outcrop-----	10	Not rated		Not rated	
530: Elaero-----	35	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.93	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Lockgate-----	25	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15% Sand fractions 75 to 85%	0.00 0.13 0.15	Poor source Slopes > 25% Depth to bedrock 40 to 60"	0.00 0.04
Granhogany-----	15	Poor source AWC < 3" to 60" depth Sand fractions 75 to 85% Fragments >10" are 5-15%	0.00 0.05 0.99	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Granidry-----	10	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.98	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.84
531: Elaero-----	55	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.93	Poor source Depth to bedrock < 40"	0.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Elaero-----	30	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.93	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
532: Elaero-----	55	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.93	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Granidry-----	20	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.98	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.84
Rock Outcrop-----	10	Not rated		Not rated	
540: Lostcannon, moist-----	45	Fair source Fragments >10" are 5-15% AWC 3 - 6" to 60" depth	0.22 0.77	Fair source Slopes 15 to 25%	0.68
Lostcannon-----	40	Fair source Fragments >10" are 5-15% AWC 3 - 6" to 60" depth	0.22 0.77	Fair source Slopes 15 to 25%	0.68
560: Dunderberg-----	30	Fair source Fragments 3-10" are 25 to 50% AWC > 6" to 60" depth or NULL AWC data	0.60 1.00	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.36 0.68
Dunderberg, warm-----	25	Fair source Fragments 3-10" are 25 to 50% AWC > 6" to 60" depth or NULL AWC data	0.60 1.00	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.36 0.68
Conwayridge-----	20	Fair source Fragments 3-10" are 25 to 50% Fragments >10" are 5-15% OM is .5 to 1%	0.11 0.38 0.50	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.28 0.68
Dunderberg, moist-----	10	Fair source Fragments 3-10" are 25 to 50% AWC > 6" to 60" depth or NULL AWC data	0.60 1.00	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.36 0.68

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
561: Dunderberg-----	40	Fair source Fragments 3-10" are 25 to 50% AWC > 6" to 60" depth or NULL AWC data	0.60 1.00	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.36 0.68
Dunderberg, warm-----	30	Fair source Fragments 3-10" are 25 to 50% AWC > 6" to 60" depth or NULL AWC data	0.60 1.00	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.36 0.68
Dunderberg, moist-----	15	Fair source Fragments 3-10" are 25 to 50% AWC > 6" to 60" depth or NULL AWC data	0.60 1.00	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.36 0.68
570: Angelwhine-----	35	Fair source OM is .5 to 1%	0.50	Poor source Slopes > 25%	0.00
Hawkinspeak-----	25	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Hawkridge-----	25	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.92
580: Murain-----	50	Poor source Fragments >10" are > 15% Fragments 3-10" are 25 to 50% OM is .5 to 1%	0.00 0.22 0.50	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.30 0.92
Shorthike-----	20	Fair source AWC 3 - 6" to 60" depth	0.94	Poor source Slopes > 25%	0.00
Murain, moist-----	15	Poor source Fragments >10" are > 15% Fragments 3-10" are 25 to 50% OM is .5 to 1%	0.00 0.22 0.50	Poor source Slopes > 25% Fragments >3" are 25 to 50%	0.00 0.30
581: Murain-----	45	Poor source Fragments >10" are > 15% Fragments 3-10" are 25 to 50% OM is .5 to 1%	0.00 0.22 0.50	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.30 0.92

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Murain-----	40	Poor source Fragments >10" are > 15% Fragments 3-10" are 25 to 50% OM is .5 to 1%	0.00 0.21 0.50	Fair source Fragments >3" are 25 to 50% Slopes 15 to 25%	0.29 0.68
590: Loope-----	40	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Heenlake-----	30	Fair source AWC 3 - 6" to 60" depth Fragments >10" are 5-15%	0.15 0.21	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Carshal-----	15	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
591: Loope-----	40	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Heenlake-----	30	Fair source AWC 3 - 6" to 60" depth Fragments >10" are 5-15%	0.15 0.21	Poor source Depth to bedrock < 40" Slopes 15 to 25% LEP 3 to 9	0.00 0.68 0.75
Celeridge-----	15	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.03	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
592: Loope-----	30	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Pinew-----	30	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Heenlake-----	25	Fair source AWC 3 - 6" to 60" depth Fragments >10" are 5-15%	0.15 0.21	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
600: Snowtell-----	45	Poor source AWC < 3" to 60" depth pH is between 4 and 6.5 above 40"	0.00 0.50	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Sonorapass-----	25	Poor source AWC < 3" to 60" depth pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.00 0.74 0.94	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Rock Outcrop-----	15	Not rated		Not rated	
610: Forsell-----	50	Poor source Fragments >10" are > 15% OM is .5 to 1% pH is between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.50 0.68 0.86	Fair source Slopes 15 to 25%	0.68
Snowtell-----	25	Poor source AWC < 3" to 60" depth pH is between 4 and 6.5 above 40"	0.00 0.50	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Rock Outcrop-----	10	Not rated		Not rated	
611: Forsell-----	50	Poor source Fragments >10" are > 15% OM is .5 to 1% pH is between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	0.00 0.50 0.68 0.86	Poor source Slopes > 25%	0.00
Snowtell-----	25	Poor source AWC < 3" to 60" depth pH is between 4 and 6.5 above 40"	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	10	Not rated		Not rated	

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
620: Indian Creek-----	90	Poor source AWC < 3" to 60" depth Clay > 40% Depth to pan 20 to 40" OM is .5 to 1%	0.00 0.00 0.00 0.50	Poor source Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.25
630: Olac-----	40	Poor source AWC < 3" to 60" depth OM is .5 to 1% Fragments >10" are 5-15%	0.00 0.50 0.92	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Flex-----	25	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Duco-----	20	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15% Clay 27 to 40%	0.00 0.73 0.98	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
640: Koontz-----	55	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Nosrac-----	30	Good source		Poor source Slopes > 25%	0.00
650: Shree-----	90	Fair source OM is .5 to 1% AWC 3 - 6" to 60" depth Clay 27 to 40%	0.50 0.73 0.98	Fair source LEP 3 to 9	0.99
651: Shree-----	50	Fair source OM is .5 to 1% AWC 3 - 6" to 60" depth Clay 27 to 40%	0.50 0.73 0.98	Fair source LEP 3 to 9	0.99
Holbrook-----	35	Poor source Fragments >10" are > 15% AWC 3 - 6" to 60" depth OM is .5 to 1%	0.00 0.06 0.50	Good source	

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
660: Delhew-----	35	Fair source Sand fractions 75 to 85% AWC 3 - 6" to 60" depth	0.06 0.08	Poor source Slopes > 25%	0.00
Grandridge-----	30	Poor source AWC < 3" to 60" depth Fragments >10" are < 5% or NULL	0.00 1.00	Poor source Depth to bedrock < 40" LEP 3 to 9 Slopes 15 to 25%	0.00 0.75 0.92
Bakscratch-----	20	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.90	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
670: Springmeyer-----	85	Good source		Fair source LEP 3 to 9	0.75
671: Springmeyer-----	50	Poor source OM < .5%	0.00	Fair source LEP 3 to 9	0.75
Cassiro-----	35	Poor source Clay > 40% OM < .5% AWC 3 - 6" to 60" depth pH is between 4 and 6.5 above 40"	0.00 0.00 0.63 0.95	Fair source Depth to bedrock 40 to 60" LEP 3 to 9	0.16 0.82
680: Rolldown-----	40	Fair source OM is .5 to 1% Fragments >10" are 5-15%	0.50 0.65	Fair source Slopes 15 to 25%	0.92
Mountpatterson-----	25	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.92
Rubble Land-----	20	Not rated		Not rated	
700: Coldtree-----	75	Poor source OM < .5% AWC 3 - 6" to 60" depth Fragments 3-10" are 25 to 50% pH is between 4 and 6.5 above 40" Fragments >10" are 5-15%	0.00 0.26 0.53 0.54 0.89	Poor source Slopes > 25% Depth to bedrock 40 to 60" Fragments >3" are 25 to 50%	0.00 0.12 0.64

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Rubble Land-----	10	Not rated		Not rated	
710: Bakscratch-----	45	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.90	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Grandridge-----	25	Poor source AWC < 3" to 60" depth Fragments >10" are < 5% or NULL	0.00 1.00	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Mctom-----	15	Poor source Fragments >10" are > 15% AWC < 3" to 60" depth Sand fractions 75 to 85% Fragments 3-10" are 25 to 50% pH is between 4 and 6.5 above 40"	0.00 0.00 0.10 0.36 0.95	Poor source Depth to bedrock < 40" Slopes > 25% Fragments >3" are 25 to 50%	0.00 0.00 0.75
720: Nohelp-----	55	Fair source Clay 27 to 40% Fragments 3-10" < 25% or NULL data	0.32 1.00	Fair source LEP 3 to 9 Slopes 15 to 25%	0.27 0.92
Joenchris-----	35	Poor source OM < .5% Clay 27 to 40% Fragments 3-10" are 25 to 50%	0.00 0.08 0.97	Fair source LEP 3 to 9 Slopes 15 to 25%	0.25 0.92
730: Burchflat-----	55	Fair source AWC 3 - 6" to 60" depth Fragments >10" are 5-15% OM is .5 to 1%	0.11 0.28 0.50	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.92
Loope-----	30	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40"	0.00
731: Burchflat-----	45	Fair source AWC 3 - 6" to 60" depth Fragments >10" are 5-15% OM is .5 to 1%	0.11 0.28 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Celeridge-----	20	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.03	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.92

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Loope-----	20	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
740: Jackflat-----	55	Poor source Fragments >10" are > 15% OM is .5 to 1% AWC 3 - 6" to 60" depth	0.00 0.50 0.58	Fair source Depth to bedrock 40 to 60" LEP 3 to 9 Slopes 15 to 25%	0.16 0.75 0.92
Grandridge-----	30	Poor source AWC < 3" to 60" depth Fragments >10" are < 5% or NULL	0.00 1.00	Poor source Depth to bedrock < 40" LEP 3 to 9 Slopes 15 to 25%	0.00 0.75 0.92
760: Thiefridge-----	45	Poor source AWC < 3" to 60" depth Fragments 3-10" are 25 to 50% pH is between 4 and 6.5 above 40"	0.00 0.23 0.97	Poor source Depth to bedrock < 40" Slopes > 25% Fragments >3" are 25 to 50%	0.00 0.00 1.00
Thiefridge-----	30	Poor source AWC < 3" to 60" depth Fragments 3-10" are 25 to 50% pH is between 4 and 6.5 above 40"	0.00 0.23 0.97	Poor source Depth to bedrock < 40" Slopes > 25% Fragments >3" are 25 to 50%	0.00 0.00 1.00
Rock Outcrop-----	10	Not rated		Not rated	
770: Sweetmount-----	50	Fair source Fragments >10" are 5-15% Clay 27 to 40%	0.89 0.98	Fair source LEP 3 to 9 Slopes 15 to 25% Depth to bedrock 40 to 60"	0.57 0.92 0.92
Hawkinspeak-----	20	Fair source AWC 3 - 6" to 60" depth Fragments >10" are < 5% or NULL	0.02 1.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Hawkridge-----	15	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.91	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.92
780: Granhogany-----	65	Poor source AWC < 3" to 60" depth Sand fractions 75 to 85% Fragments >10" are 5-15%	0.00 0.05 0.99	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Rock Outcrop-----	20	Not rated		Not rated	
790: Dab-----	50	Fair source OM is .5 to 1% AWC 3 - 6" to 60" depth	0.08 0.91	Poor source Slopes > 25%	0.00
Dab-----	35	Fair source OM is .5 to 1% AWC 3 - 6" to 60" depth	0.08 0.91	Poor source Slopes > 25%	0.00
791: Dab-----	45	Fair source OM is .5 to 1% AWC 3 - 6" to 60" depth	0.08 0.91	Poor source Slopes > 25%	0.00
Longday-----	25	Fair source OM is .5 to 1%	0.50	Poor source Slopes > 25%	0.00
Thiefridge-----	15	Poor source AWC < 3" to 60" depth Fragments 3-10" are 25 to 50% pH is between 4 and 6.5 above 40"	0.00 0.23 0.97	Poor source Depth to bedrock < 40" Slopes 15 to 25% Fragments >3" are 25 to 50%	0.00 0.68 1.00
792: Dab-----	35	Fair source OM is .5 to 1% AWC 3 - 6" to 60" depth	0.08 0.91	Poor source Slopes > 25%	0.00
Aspocket-----	25	Poor source Fragments >10" are > 15%	0.00	Fair source Slopes 15 to 25% Depth to bedrock 40 to 60"	0.68 0.87
Hawkridge-----	25	Poor source AWC < 3" to 60" depth Fragments >10" are 5-15%	0.00 0.91	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
800: Grandridge-----	60	Poor source AWC < 3" to 60" depth Fragments >10" are < 5% or NULL	0.00 1.00	Poor source Depth to bedrock < 40" LEP 3 to 9 Slopes 15 to 25%	0.00 0.75 0.92
Delhew-----	30	Fair source Sand fractions 75 to 85% AWC 3 - 6" to 60" depth	0.06 0.08	Poor source Slopes > 25%	0.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
801: Grandridge-----	40	Poor source AWC < 3" to 60" depth Fragments >10" are < 5% or NULL	0.00 1.00	Poor source Depth to bedrock < 40" LEP 3 to 9 Slopes 15 to 25%	0.00 0.75 0.92
Delhew-----	25	Fair source Sand fractions 75 to 85% AWC 3 - 6" to 60" depth	0.06 0.08	Poor source Slopes > 25%	0.00
Bullville-----	20	Poor source AWC < 3" to 60" depth OM is .5 to 1%	0.00 0.50	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
810: Corbett-----	55	Poor source AWC < 3" to 60" depth Fragments >10" are > 15% OM is .5 to 1% Sand fractions 75 to 85% pH is between 4 and 6.5 above 40"	0.00 0.00 0.50 0.61 0.95	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Toiyabe-----	20	Poor source AWC < 3" to 60" depth Fragments >10" are > 15% Sand fractions 75 to 85%	0.00 0.00 0.68	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Rock Outcrop-----	10	Not rated		Not rated	
820: Freelpeak-----	50	Poor source Sand fractions > 85% AWC < 3" to 60" depth Fragments >10" are 5-15% OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.00 0.00 0.15 0.50 0.74	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
Windyridge-----	25	Poor source AWC < 3" to 60" depth OM < .5% Sand fractions 75 to 85% pH is between 4 and 6.5 above 40"	0.00 0.00 0.15 0.50	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.12
Rock Outcrop-----	10	Not rated		Not rated	

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
830: Windyridge-----	45	Poor source AWC < 3" to 60" depth OM < .5% Sand fractions 75 to 85% pH is between 4 and 6.5 above 40"	0.00 0.00 0.15 0.50	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.68
Freelpeak-----	25	Poor source Sand fractions > 85% AWC < 3" to 60" depth Fragments >10" are 5-15% OM is .5 to 1% pH is between 4 and 6.5 above 40"	0.00 0.00 0.15 0.50 0.74	Poor source Depth to bedrock < 40" Slopes 15 to 25%	0.00 0.12
Rock Outcrop-----	15	Not rated		Not rated	
840: Lavaspring-----	55	Fair source K-factor .10 -.35	0.37	Poor source Saturation < 1' depth	0.00
Trespass-----	25	Good source		Fair source LEP 3 to 9 Saturation from 1 to 3'	0.80 0.88
Lavaspring-----	10	Fair source K-factor .10 -.35 pH is between 4 and 6.5 above 40"	0.37 0.95	Poor source Saturation < 1' depth	0.00
850: Lunder-----	90	Poor source Clay > 40% AWC < 3" to 60" depth OM < .5% Depth to pan < 20"	0.00 0.00 0.00 0.00	Poor source Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.25
851: Lunder-----	50	Poor source Clay > 40% AWC < 3" to 60" depth OM < .5% Depth to pan < 20"	0.00 0.00 0.00 0.00	Poor source Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9 Slopes 15 to 25%	0.00 0.00 0.25 0.92
Leviathan-----	35	Fair source OM is .5 to 1% Clay 27 to 40% AWC > 6" to 60" depth or NULL AWC data	0.50 0.98 1.00	Poor source Slopes > 25%	0.00

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
860: Hardnut-----	55	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Ocashe-----	30	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25%	0.00 0.00
870: Epvip-----	40	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes 15 to 25% LEP 3 to 9	0.00 0.68 0.75
Domehill-----	30	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" LEP 3 to 9 Slopes 15 to 25%	0.00 0.75 0.92
Ashflat-----	15	Good source		Fair source LEP 3 to 9	0.75
871: Halfash-----	50	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes 15 to 25% LEP 3 to 9	0.00 0.68 0.75
Domehill-----	35	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" LEP 3 to 9 Slopes 15 to 25%	0.00 0.75 0.92
872: Epvip-----	40	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Vetash-----	25	Good source		Poor source Slopes > 25% LEP 3 to 9	0.00 0.88

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Epvip-----	20	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
873: Epvip-----	35	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" LEP 3 to 9 Slopes 15 to 25%	0.00 0.75 0.92
Hardnut-----	35	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes > 25% LEP 3 to 9	0.00 0.00 0.75
Vetash-----	15	Good source		Poor source Slopes > 25% LEP 3 to 9	0.00 0.88
880: Mopana-----	90	Poor source AWC < 3" to 60" depth Depth to pan < 20" Clay > 40% OM is .5 to 1%	0.00 0.00 0.00 0.50	Poor source Depth to pan < 40" AASHTO GIN > 8 (low soil strength) LEP 3 to 9	0.00 0.00 0.25
890: Masonic-----	40	Fair source AWC 3 - 6" to 60" depth Fragments 3-10" < 25% or NULL data	0.01 1.00	Poor source Depth to bedrock < 40" Slopes 15 to 25% LEP 3 to 9	0.00 0.68 0.75
Epvip-----	30	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" Slopes 15 to 25% LEP 3 to 9	0.00 0.68 0.75
Domehill-----	15	Poor source AWC < 3" to 60" depth	0.00	Poor source Depth to bedrock < 40" LEP 3 to 9	0.00 0.75

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
900:					
Brokenhoe-----	60	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"	0.00
		Depth to pan 20 to 40"	0.00	LEP 3 to 9	0.25
		Clay 27 to 40%	0.08	Slopes 15 to 25%	0.92
		Fragments >10" are 5-15%	0.23		
		OM is .5 to 1%	0.50		
		Fragments 3-10" are 25 to 50%	0.85		
Fisherdig-----	25	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"	0.00
		Depth to pan < 20"	0.00	LEP 3 to 9	0.25
		Clay > 40%	0.00		
		OM is .5 to 1%	0.50		
		Fragments >10" are 5-15%	0.99		
		Fragments 3-10" < 25% or NULL data	1.00		
910:					
Indian Creek-----	60	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"	0.00
		Clay > 40%	0.00	AASHTO GIN > 8 (low soil strength)	0.00
		Depth to pan 20 to 40"	0.00	LEP 3 to 9	0.25
		OM is .5 to 1%	0.50		
Haybourne-----	25	Poor source		Good source	
		OM < .5%	0.00		
		AWC 3 - 6" to 60" depth	0.99		
920:					
Aquic Torrifluvents-----	35	Poor source		Fair source	
		Fragments >10" are > 15%	0.00	Fragments >3" are 25 to 50%	0.77
		OM < .5%	0.00	No saturated zone within 3' depth	1.00
		AWC < 3" to 60" depth	0.00		
		Sand fractions 75 to 85%	0.08		
		Fragments 3-10" are 25 to 50%	0.74		
Conway-----	25	Good source		Fair source	
		K-factor < .10 or is NULL	0.99	Saturation from 1 to 3'	0.76
Torrifluventic Haploxerolls-----	25	Poor source		Good source	
		Fragments >10" are > 15%	0.00		
		OM < .5%	0.00		
		AWC 3 - 6" to 60" depth	0.01		
		Sand fractions 75 to 85%	0.08		

TABLE 20.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
930: Lavaspring-----	60	Fair source K-factor .10 -.35	0.37	Good source	
Lavaspring-----	25	Fair source K-factor .10 -.35	0.37	Poor source Saturation < 1' depth	0.00
960: Rose Creek-----	85	Fair source SAR from 4 to 13 K-factor < .10 or is NULL	0.78 0.99	Fair source Saturation from 1 to 3'	0.76
998: Dumps-----	60	Not rated		Not rated	
Pits-----	30	Not rated		Not rated	
999: Water-----	100	Not rated		Not rated	

The interpretation for reclamation material evaluates the following soil properties at variable depths in the soil: the amount of sand, clay, fragments, organic matter content (OM), the Wind Erodibility Group (WEG), available water (AWC), soil pH, salinity (EC), amount of sodium (SAR), carbonates and susceptibility of the soil to erosion by water (K-factor).

The interpretation for roadfill source evaluates the following soil properties at variable depths in the soil: shrink-swell potential expressed as linear extensibility percent (LEP), depth to rock or cemented pan, wetness, slope, soil strength expressed as AASHTO Group Index Number (AASHTO GIN) and fragment content.

TABLE 21.-- Management

Pacific Southwest MLRA Office Interpretations

The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only three highest value limitations are listed. There may be more limitations.

Fine earth fractions and coarse fragments are reported on a weight basis.

A brief rating criteria summary and abbreviations are listed on the last page of this report.

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
100: Lithnnp-----	40	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Hawkinspeak-----	30	Limitations Thin layer Fragments (>3") 15-35%	0.77 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.77 0.50
Rock Outcrop-----	15	Not rated		Not rated	
101: Lithnnp, moist-----	40	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Rock Outcrop-----	25	Not rated		Not rated	
Fishsnooze-----	20	Limitations Fragments (>3") > 35% Thin layer	1.00 0.70	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.70
102: Lithnnp-----	40	Limitations Thin layer	1.00	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
Rock Outcrop-----	25	Not rated		Not rated	
Fishsnooze-----	20	Limitations Fragments (>3") > 35% Thin layer	1.00 0.70	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.70
103: Lithnnp-----	40	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Meiss-----	30	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Hawkinspeak-----	15	Limitations Thin layer Fragments (>3") 15-35%	0.77 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.77 0.50
110: Jobsis-----	45	Limitations Thin layer Seepage problem	1.00 1.00	Limitations Permeability > 2"/hr (seepage) Depth to bedrock < 20" Slopes > 7%	1.00 1.00 1.00
Whittell-----	25	Limitations Fragments (>3") > 35% Seepage problem Thin layer	1.00 1.00 0.79	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.79
Rock Outcrop-----	15	Not rated		Not rated	
111: Whittell-----	45	Limitations Fragments (>3") > 35% Seepage problem Thin layer	1.00 1.00 0.79	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.79
Jobsis-----	25	Limitations Thin layer Seepage problem	1.00 1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated	
112: Jobsis-----	45	Limitations Thin layer Seepage problem	1.00 1.00	Limitations Permeability > 2"/hr (seepage) Depth to bedrock < 20" Slopes > 7%	1.00 1.00 1.00
Whittell-----	25	Limitations Fragments (>3") > 35% Seepage problem Thin layer	1.00 1.00 0.79	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.79
Rock Outcrop-----	15	Not rated		Not rated	

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
113: Whittell-----	45	Limitations Fragments (>3") > 35% Seepage problem Thin layer	1.00 1.00 0.79	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.79
Jobsis-----	25	Limitations Thin layer Seepage problem	1.00 1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated	
120: Toiyabe-----	45	Limitations Thin layer Seepage problem Fragments (>3") 15-35%	1.00 1.00 0.90	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
Corbett-----	25	Limitations Seepage problem Thin layer Fragments (>3") 15-35%	1.00 0.99 0.20	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.99
Rock Outcrop-----	15	Not rated		Not rated	
121: Toiyabe-----	45	Limitations Thin layer Seepage problem Fragments (>3") 15-35%	1.00 1.00 0.90	Limitations Permeability > 2"/hr (seepage) Depth to bedrock < 20" Slopes > 7%	1.00 1.00 1.00
Corbett-----	35	Limitations Seepage problem Thin layer Fragments (>3") 15-35%	1.00 0.99 0.20	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.99
Rock Outcrop-----	10	Not rated		Not rated	
122: Toiyabe-----	50	Limitations Thin layer Seepage problem Fragments (>3") 15-35%	1.00 1.00 0.90	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
Corbett-----	20	Limitations Seepage problem Thin layer Fragments (>3") 15-35%	1.00 0.99 0.20	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.99

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Rock Outcrop-----	15	Not rated		Not rated	
130: Sofgran-----	40	Limitations Seepage problem Fragments (>3") 15-35%	1.00 0.07	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Klauspeak-----	30	Limitations Seepage problem Fragments (>3") 15-35%	1.00 0.83	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Temo-----	15	Limitations Thin layer Seepage problem	1.00 1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
131: Sofgran-----	40	Limitations Seepage problem Fragments (>3") 15-35%	1.00 0.07	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Temo-----	25	Limitations Thin layer Seepage problem	1.00 1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
Shalgran-----	20	Limitations Thin layer Fragments (>3") > 35% Seepage problem	1.00 1.00 1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
132: Sofgran-----	50	Limitations Seepage problem Fragments (>3") 15-35%	1.00 0.07	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Temo-----	25	Limitations Thin layer Seepage problem	1.00 1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated	
140: Temo-----	40	Limitations Thin layer Seepage problem	1.00 1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Dagget-----	30	Limitations Seepage problem Thin layer Fragments (>3") 15-35%	1.00 0.42 0.05	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.42
Rock Outcrop-----	15	Not rated		Not rated	
150: Mottskel-----	85	Limitations Seepage problem Fragments (>3") > 35%	1.00 1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
160: Hopeval-----	50	Limitations Saturation < 2' depth	1.00	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.31
Hopeval-----	35	Limitations Saturation < 2' depth	1.00	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.31
162: Corralval-----	45	Limitations Saturation between 2-4'	0.87	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.08
Hopeval-----	45	Limitations Saturation < 2' depth	1.00	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.08
170: Burnlake-----	60	Limitations Seepage problem Fragments (>3") 15-35%	1.00 0.19	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Roadcat-----	25	Limitations Seepage problem Fragments (>3") 15-35%	1.00 0.18	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
171: Stumpatil-----	65	Limitations Fragments (>3") 15-35%	0.48	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Morscour-----	20	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Depth to bedrock < 20" Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00 1.00

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
172: Stumpatil-----	85	Limitations Fragments (>3") 15-35%	0.48	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
173: Stumpatil-----	85	Limitations Fragments (>3") 15-35%	0.48	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
174: Stumpatil-----	35	Limitations Fragments (>3") 15-35%	0.48	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Sonorapass-----	30	Limitations Thin layer Fragments (>3") 15-35%	0.99 0.93	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock < 20"	1.00 1.00 0.99
Snowtell-----	20	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.50	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
180: Shalgran-----	70	Limitations Thin layer Fragments (>3") > 35% Seepage problem	1.00 1.00 1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated	
190: Hopeval-----	50	Limitations Saturation < 2' depth	1.00	Limitations Permeability > 2"/hr (seepage)	1.00
Hopeval-----	35	Limitations Saturation < 2' depth	1.00	Limitations Permeability > 2"/hr (seepage)	1.00
200: Cavebear-----	35	Limitations Saturation < 2' depth Seepage problem	1.00 1.00	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.31
Hopeval-----	25	Limitations Saturation < 2' depth	1.00	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.31

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Hopeval-----	20	Limitations Saturation < 2' depth	1.00	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.31
210: Waterpeak-----	80	Limitations Fragments (>3") > 35%	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated	
211: Waterpeak-----	50	Limitations Fragments (>3") > 35%	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Buggin-----	25	Limitations Thin layer Seepage problem Fragments (>3") 15-35%	1.00 1.00 0.60	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated	
212: Waterpeak-----	45	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Sofgran-----	25	Limitations Seepage problem Fragments (>3") 15-35%	1.00 0.07	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Temo-----	15	Limitations Thin layer Seepage problem	1.00 1.00	Limitations Permeability > 2"/hr (seepage) Depth to bedrock < 20" Slopes > 7%	1.00 1.00 1.00
220: Hardtil-----	45	Limitations Thin layer Saturation < 2' depth Seepage problem	1.00 1.00 1.00	Limitations Permeability > 2"/hr (seepage) Depth to bedrock < 20" Slopes > 7%	1.00 1.00 1.00
Alpineco-----	25	Limitations Fragments (>3") > 35% Saturation between 2-4' Thin layer	1.00 0.86 0.13	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.13
Rock Outcrop-----	20	Not rated		Not rated	

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
221: Hardtil-----	45	Limitations Thin layer Saturation < 2' depth Seepage problem	1.00 1.00 1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
Alpineco-----	25	Limitations Fragments (>3") > 35% Saturation between 2-4' Thin layer	1.00 0.86 0.13	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.13
Rock Outcrop-----	20	Not rated		Not rated	
222: Hardtil-----	40	Limitations Thin layer Saturation < 2' depth Seepage problem	1.00 1.00 1.00	Limitations Permeability > 2"/hr (seepage) Depth to bedrock < 20" Slopes > 7%	1.00 1.00 1.00
Alpineco-----	25	Limitations Fragments (>3") > 35% Saturation between 2-4' Thin layer	1.00 0.86 0.13	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.13
Rock Outcrop-----	20	Not rated		Not rated	
230: Hawkinspeak-----	45	Limitations Thin layer Fragments (>3") 15-35%	0.77 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.77 0.50
Thief ridge-----	25	Limitations Thin layer Fragments (>3") > 35%	1.00 1.00	Limitations Depth to bedrock < 20" Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00 1.00
Angelwhine-----	15	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
231: Hawkinspeak-----	50	Limitations Thin layer Fragments (>3") 15-35%	0.77 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.77 0.50

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Hawkinspeak-----	35	Limitations Thin layer Fragments (>3") 15-35%	0.77 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.77 0.50
232: Hawkinspeak-----	45	Limitations Thin layer Fragments (>3") 15-35%	0.77 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.77 0.50
Hawkinspeak-----	25	Limitations Thin layer Fragments (>3") 15-35%	0.77 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.77 0.50
Hawkridge-----	15	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.07	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
233: Angelwhine-----	30	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Hawkinspeak-----	30	Limitations Thin layer Fragments (>3") 15-35%	0.77 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.77 0.50
Hawkridge-----	25	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.07	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
234: Hawkinspeak-----	40	Limitations Thin layer Fragments (>3") 15-35%	0.77 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.77 0.50
Hawkinspeak-----	25	Limitations Thin layer Fragments (>3") 15-35%	0.77 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.77 0.50

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Thief ridge-----	20	Limitations Thin layer Fragments (>3") > 35%	1.00 1.00	Limitations Depth to bedrock < 20" Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00 1.00
235: Hawkinspeak-----	35	Limitations Thin layer Fragments (>3") 15-35%	0.77 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.77 0.50
Hawkinspeak-----	30	Limitations Thin layer Fragments (>3") 15-35%	0.77 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.77 0.50
Angelwhine-----	20	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
240: Granylith-----	45	Limitations Thin layer Saturation < 2' depth Seepage problem	1.00 1.00 1.00	Limitations Permeability > 2"/hr (seepage) Depth to bedrock < 20" Slopes > 7%	1.00 1.00 1.00
Hargran-----	25	Limitations Fragments (>3") 15-35% Saturation between 2-4' Thin layer	0.88 0.86 0.52	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.52
Rock Outcrop-----	15	Not rated		Not rated	
250: Florand-----	40	Limitations Thin layer	0.19	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.19
Lostridge-----	30	Limitations Thin layer	0.88	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.88
Fishsnooze-----	15	Limitations Fragments (>3") > 35% Thin layer	1.00 0.70	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.70

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
260:					
HawkrIDGE-----	35	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Fragments (>3") 15-35%	0.01	Slopes > 7%	1.00
				Permeability .6-2"/hr (some seepage)	0.50
Hawkinspeak-----	30	Limitations		Limitations	
		Thin layer	0.77	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.01	Depth to bedrock from 20-60"	0.77
				Permeability .6-2"/hr (some seepage)	0.50
Hawkinspeak-----	20	Limitations		Limitations	
		Thin layer	0.77	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.01	Depth to bedrock from 20-60"	0.77
				Permeability .6-2"/hr (some seepage)	0.50
261:					
HawkrIDGE-----	30	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Fragments (>3") 15-35%	0.07	Slopes > 7%	1.00
				Permeability .6-2"/hr (some seepage)	0.50
Lithnip-----	25	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Hawkinspeak-----	20	Limitations		Limitations	
		Thin layer	0.77	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.01	Depth to bedrock from 20-60"	0.77
				Permeability .6-2"/hr (some seepage)	0.50
262:					
Domehill-----	50	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%	1.00
				Permeability .6-2"/hr (some seepage)	0.50
Kiote-----	35	No limitations		Limitations	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
270:					
Duco-----	40	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.81	Depth to bedrock < 20"	1.00
		Shrink-swell (LEP 3-6)	0.50		

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Smallcone-----	30	Limitations Thin layer Seepage problem	1.00 1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Cagle-----	15	Limitations Shrink-swell (LEP >6) Thin layer MH or CH Unified and PI <40%	1.00 0.91 0.50	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.91
271: Duco-----	40	Limitations Thin layer Fragments (>3") 15-35% Shrink-swell (LEP 3-6)	1.00 0.81 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Vetagrande-----	25	No limitations		Limitations Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 0.50
Pinenut-----	20	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
280: Longcreek-----	50	Limitations Thin layer Fragments (>3") > 35% Shrink-swell (LEP 3-6)	1.00 1.00 0.50	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
Devada-----	35	Limitations Thin layer Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 1.00 0.50	Limitations Depth to bedrock < 20" Slopes 2 to 7%	1.00 0.08
290: Pernty-----	55	Limitations Thin layer Shrink-swell (LEP 3-6) Fragments (>3") 15-35%	1.00 0.50 0.05	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
Chen-----	30	Limitations Thin layer Shrink-swell (LEP 3-6) Fragments (>3") 15-35%	1.00 0.50 0.06	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
310: Bagval-----	40	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes 2 to 7%	0.08

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Bagval-----	25	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 0.50	Limitations Slopes 2 to 7%	0.08
Wetbag-----	15	Limitations Saturation < 2' depth Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 1.00 0.50	Limitations Slopes 2 to 7%	0.08
Wetbag-----	10	Limitations Saturation < 2' depth Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 1.00 0.50	Limitations Slopes 2 to 7%	0.08
320: Franktown-----	75	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated	
330: Oest-----	85	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability .6-2"/hr (some seepage) Slopes 2 to 7%	0.50 0.31
340: Aspocket-----	55	Limitations Fragments (>3") > 35% Thin layer	0.99 0.03	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.03
Aspocket-----	30	Limitations Fragments (>3") > 35% Thin layer	0.99 0.03	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.03
350: Leroman-----	45	Limitations Thin layer Fragments (>3") 15-35%	0.74 0.43	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.74 0.50
Chenhigh-----	20	Limitations Thin layer Shrink-swell (LEP >6)	1.00 1.00	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Celeridge-----	10	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.61	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Dogbed-----	10	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
360: Monibasin-----	70	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Vermdig-----	15	Limitations Saturation < 2' depth Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Permeability .6-2"/hr (some seepage) Slopes 2 to 7%	0.50 0.31
370: Celeridge-----	30	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.61	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Gerdog-----	25	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.04	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
Loope-----	20	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Pinew-----	10	Limitations Thin layer Shrink-swell (LEP 3-6) Fragments (>3") 15-35%	1.00 0.50 0.01	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
380: Joecut-----	40	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Celeridge-----	20	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.61	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Joecut-----	15	Limitations Saturation between 2-4' Shrink-swell (LEP 3-6)	0.53 0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Gerdog-----	10	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.04	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
381: Heenlake-----	15	Limitations Thin layer Fragments (>3") 15-35% Shrink-swell (LEP 3-6)	0.99 0.92 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 0.99
Loope-----	10	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Joecut-----	30	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Joecut-----	30	Limitations Saturation between 2-4' Shrink-swell (LEP 3-6)	0.53 0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
382: Joecut-----	55	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Joecut-----	30	Limitations Saturation between 2-4' Shrink-swell (LEP 3-6)	0.53 0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
390: Heenlake-----	40	Limitations Thin layer Fragments (>3") 15-35% Shrink-swell (LEP 3-6)	0.99 0.89 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 0.99
Loope-----	30	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Chenhhigh-----	15	Limitations Thin layer Shrink-swell (LEP >6)	1.00 1.00	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
391: Heenlake-----	40	Limitations Thin layer Fragments (>3") 15-35% Shrink-swell (LEP 3-6)	0.99 0.92 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 0.99
Loope-----	25	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Dogbed-----	20	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
392: Heenlake-----	50	Limitations Thin layer Fragments (>3") 15-35% Shrink-swell (LEP 3-6)	0.99 0.92 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 0.99
Loope-----	35	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
400: Pinew-----	35	Limitations Thin layer Shrink-swell (LEP 3-6) Fragments (>3") 15-35%	1.00 0.50 0.01	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Carshal-----	25	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Loope-----	15	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Celeridge-----	10	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.61	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
401: Pinew-----	75	Limitations Thin layer Shrink-swell (LEP 3-6) Fragments (>3") 15-35%	1.00 0.50 0.01	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Rock Outcrop-----	10	Not rated		Not rated	
410: Wolfcut-----	85	Limitations Fragments (>3") 15-35%	0.95	Limitations Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 0.50
420: Buggin-----	75	Limitations Thin layer Seepage problem Fragments (>3") 15-35%	1.00 1.00 0.60	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated	
430: Newcone-----	75	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated	
440: Dogbed-----	35	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Celeridge-----	25	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.61	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Carshal-----	20	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Joecut-----	10	Limitations Saturation between 2-4' Shrink-swell (LEP 3-6)	0.53 0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
450: Carshal-----	55	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Loope-----	20	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.03	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Rock Outcrop-----	10	Not rated		Not rated	
460: Toejom-----	45	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.01	Depth to bedrock < 20"	1.00
Pimogran-----	30	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.01	Depth to bedrock < 20"	1.00
Rock Outcrop-----	10	Not rated		Not rated	
461: Toejom-----	40	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.01	Depth to bedrock < 20"	1.00
Pimogran-----	35	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.01	Depth to bedrock < 20"	1.00
Rock Outcrop-----	10	Not rated		Not rated	
462: Toejom-----	40	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.01	Depth to bedrock < 20"	1.00
Glenbrook-----	30	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock < 20"	1.00
Pimogran-----	20	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Seepage problem	1.00	Permeability > 2"/hr (seepage)	1.00
		Fragments (>3") 15-35%	0.01	Depth to bedrock < 20"	1.00
470: Sumeadow-----	55	Limitations		Limitations	
		Fragments (>3") 15-35%	0.94	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Lostridge-----	30	Limitations Thin layer	0.88	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.88
471: Sumeadow-----	55	Limitations Fragments (>3") 15-35%	0.94	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Sumeadow-----	30	Limitations Fragments (>3") 15-35%	0.94	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
480: Aspetill-----	60	Limitations Fragments (>3") > 35%	1.00	Limitations Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 0.50
Aspetill-----	25	Limitations Fragments (>3") > 35%	1.00	Limitations Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 0.50
481: Aspetill-----	50	Limitations Fragments (>3") > 35%	1.00	Limitations Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 0.50
Aspetill-----	35	Limitations Fragments (>3") > 35%	1.00	Limitations Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 0.50
490: Cloudburst-----	50	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Murain-----	35	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
491: Cloudburst-----	45	Limitations Fragments (>3") > 35%	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Murain-----	25	Limitations Fragments (>3") > 35%	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Hardtil-----	15	Limitations Thin layer Saturation < 2' depth Seepage problem	1.00 1.00 1.00	Limitations Permeability > 2"/hr (seepage) Depth to bedrock < 20" Slopes > 7%	1.00 1.00 1.00
500: Chrisflat-----	90	Limitations Fragments (>3") 15-35%	0.89	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
510: Rubble Land-----	40	Not rated		Not rated	
Lithnip-----	20	Limitations Thin layer	1.00	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated	
Fishsnooze-----	10	Limitations Fragments (>3") > 35% Thin layer	1.00 0.70	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.70
511: Rock Outcrop-----	40	Not rated		Not rated	
Snowtell-----	30	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.50	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
Forsell-----	15	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
512: Rock Outcrop-----	50	Not rated		Not rated	
Snowtell-----	40	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
513: Rubble Land-----	40	Not rated		Not rated	
Holdon-----	30	Limitations Fragments (>3") > 35% Thin layer Slight seepage problem	1.00 0.19 0.10	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.19

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Rock Outcrop-----	15	Not rated		Not rated	
520: Canfire-----	40	Limitations Thin layer Shrink-swell (LEP 3-6) Fragments (>3") 15-35%	1.00 0.50 0.01	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Crispy-----	35	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 7% Depth to bedrock < 20" Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated	
530: Elaero-----	35	Limitations Thin layer Fragments (>3") 15-35%	0.99 0.05	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 0.99
Lockgate-----	25	Limitations Fragments (>3") 15-35% Thin layer	0.61 0.37	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.37
Granhogany-----	15	Limitations Thin layer Seepage problem	1.00 1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
Granidry-----	10	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
531: Elaero-----	55	Limitations Thin layer Fragments (>3") 15-35%	0.99 0.03	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock < 20"	1.00 1.00 0.99
Elaero-----	30	Limitations Thin layer Fragments (>3") 15-35%	0.99 0.05	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 0.99

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
532: Elaero-----	55	Limitations Thin layer Fragments (>3") 15-35%	0.99 0.05	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 0.99
Granidry-----	20	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Rock Outcrop-----	10	Not rated		Not rated	
540: Lostcannon, moist-----	45	Limitations Fragments (>3") 15-35%	0.24	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Lostcannon-----	40	Limitations Fragments (>3") 15-35%	0.24	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
560: Dunderberg-----	30	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Dunderberg, warm-----	25	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Conwayridge-----	20	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Dunderberg, moist-----	10	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
561: Dunderberg-----	40	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Dunderberg, warm-----	30	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Dunderberg, moist-----	15	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
570: Angelwhine-----	35	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Hawkinspeak-----	25	Limitations Thin layer Fragments (>3") 15-35%	0.77 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.77 0.50
Hawkridge-----	25	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
580: Murain-----	50	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Shorthike-----	20	Limitations Fragments (>3") 15-35%	0.27	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Murain, moist-----	15	Limitations Fragments (>3") > 35%	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
581: Murain-----	45	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Murain-----	40	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
590: Loope-----	40	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Heenlake-----	30	Limitations Thin layer Fragments (>3") 15-35% Shrink-swell (LEP 3-6)	0.99 0.92 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 0.99
Carshal-----	15	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
591: Loope-----	40	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Heenlake-----	30	Limitations Thin layer Fragments (>3") 15-35% Shrink-swell (LEP 3-6)	0.99 0.92 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 0.99
Celeridge-----	15	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.61	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
592: Loope-----	30	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Pinew-----	30	Limitations Thin layer Shrink-swell (LEP 3-6) Fragments (>3") 15-35%	1.00 0.50 0.01	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Heenlake-----	25	Limitations Thin layer Fragments (>3") 15-35% Shrink-swell (LEP 3-6)	0.99 0.92 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 0.99
600: Snowtell-----	45	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.50	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
Sonorapass-----	25	Limitations Thin layer Fragments (>3") 15-35%	0.99 0.93	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock < 20"	1.00 1.00 0.99

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Rock Outcrop-----	15	Not rated		Not rated	
610: Forsell-----	50	Limitations Fragments (>3") > 35%	1.00	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
Snowtell-----	25	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.50	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated	
611: Forsell-----	50	Limitations Fragments (>3") > 35%	1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Snowtell-----	25	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated	
620: Indian Creek-----	90	Limitations Shrink-swell (LEP >6) Thin layer MH or CH Unified and PI <40%	1.00 0.99 0.50	Limitations Permeability > 2"/hr (seepage) Depth to pan < 20" Slopes 2 to 7%	1.00 0.99 0.31
630: Olac-----	40	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.12	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Flex-----	25	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Duco-----	20	Limitations Thin layer Fragments (>3") 15-35% Shrink-swell (LEP 3-6)	1.00 0.55 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
640: Koontz-----	55	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Nosrac-----	30	No limitations Fragments (>3") 15-35%	0.01	Limitations Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 0.50
650: Shree-----	90	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00
651: Shree-----	50	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.31
Holbrook-----	35	Limitations Fragments (>3") 15-35%	0.92	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.31
660: Delhew-----	35	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Grandridge-----	30	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Bakscratch-----	20	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability > 2"/hr (seepage)	1.00 1.00 1.00
670: Springmeyer-----	85	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes 2 to 7% Permeability .6-2"/hr (some seepage)	0.66 0.50
671: Springmeyer-----	50	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Permeability .6-2"/hr (some seepage) Slopes 2 to 7%	0.50 0.31
Cassiro-----	35	Limitations Shrink-swell (LEP 3-6) Thin layer	0.50 0.26	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7% Depth to bedrock from 20-60"	1.00 0.31 0.26

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
680: Rollidown-----	40	No limitations Fragments (>3") 15-35%	0.07	Limitations Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 0.50
Mountpatterson-----	25	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.87	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Rubble Land-----	20	Not rated		Not rated	
700: Coldtree-----	75	Limitations Fragments (>3") > 35% Thin layer	1.00 0.29	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.29
Rubble Land-----	10	Not rated		Not rated	
710: Bakscratch-----	45	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Grandridge-----	25	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Mctom-----	15	Limitations Fragments (>3") > 35% Seepage problem Thin layer	1.00 1.00 0.74	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.74
720: Nohelp-----	55	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35%	1.00 0.66	Limitations Slopes > 7%	1.00
Joenchris-----	35	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35%	1.00 0.30	Limitations Slopes > 7%	1.00
730: Burchflat-----	55	Limitations Fragments (>3") 15-35% Thin layer	0.98 0.66	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.66

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Loope-----	30	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
731: Burchflat-----	45	Limitations Fragments (>3") 15-35% Thin layer	0.98 0.66	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.66
Celeridge-----	20	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.61	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Loope-----	20	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.01	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
740: Jackflat-----	55	Limitations Fragments (>3") > 35% Shrink-swell (LEP 3-6) Thin layer	1.00 0.50 0.26	Limitations Slopes > 7% Permeability .6-2"/hr (some seepage) Depth to bedrock from 20-60"	1.00 0.50 0.26
Grandridge-----	30	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
760: Thief ridge-----	45	Limitations Thin layer Fragments (>3") > 35%	1.00 1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Thief ridge-----	30	Limitations Thin layer Fragments (>3") > 35%	1.00 1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated	
770: Sweetmount-----	50	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35% Thin layer	1.00 0.08 0.02	Limitations Slopes > 7% Permeability .6-2"/hr (some seepage) Depth to bedrock from 20-60"	1.00 0.50 0.02

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Hawkinspeak-----	20	Limitations Thin layer Fragments (>3") 15-35%	0.77 0.01	Limitations Slopes > 7% Depth to bedrock from 20-60" Permeability .6-2"/hr (some seepage)	1.00 0.77 0.50
Hawkridge-----	15	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.07	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
780: Granhogany-----	65	Limitations Thin layer Seepage problem	1.00 1.00	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
Rock Outcrop-----	20	Not rated		Not rated	
790: Dab-----	50	No limitations		Limitations Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 0.50
Dab-----	35	No limitations		Limitations Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 0.50
791: Dab-----	45	No limitations		Limitations Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 0.50
Longday-----	25	Limitations Fragments (>3") 15-35%	0.28	Limitations Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 0.50
Thiefridge-----	15	Limitations Thin layer Fragments (>3") > 35%	1.00 1.00	Limitations Depth to bedrock < 20" Permeability > 2"/hr (seepage) Slopes > 7%	1.00 1.00 1.00
792: Dab-----	35	No limitations		Limitations Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 0.50
Aspocket-----	25	Limitations Fragments (>3") > 35% Thin layer	0.99 0.03	Limitations Permeability > 2"/hr (seepage) Slopes > 7% Depth to bedrock from 20-60"	1.00 1.00 0.03

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Hawkridge-----	25	Limitations Thin layer Fragments (>3") 15-35%	1.00 0.07	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
800: Grandridge-----	60	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Delhew-----	30	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
801: Grandridge-----	40	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Delhew-----	25	No limitations		Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Bullville-----	20	Limitations Thin layer	0.86	Limitations Slopes > 7% Depth to bedrock from 20-60"	1.00 0.86
810: Corbett-----	55	Limitations Seepage problem Thin layer Fragments (>3") 15-35%	1.00 0.99 0.20	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.99
Toiyabe-----	20	Limitations Thin layer Seepage problem Fragments (>3") 15-35%	1.00 1.00 0.90	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock < 20"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated	
820: Freelpeak-----	50	Limitations Fragments (>3") > 35% Thin layer Possible seepage problem	0.99 0.66 0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.66

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Windyridge-----	25	Limitations Thin layer Seepage problem	1.00 1.00	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated	
830: Windyridge-----	45	Limitations Thin layer Seepage problem	1.00 1.00	Limitations Depth to bedrock < 20" Slopes > 7%	1.00 1.00
Freelpeak-----	25	Limitations Fragments (>3") > 35% Thin layer Possible seepage problem	0.99 0.66 0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage) Depth to bedrock from 20-60"	1.00 1.00 0.66
Rock Outcrop-----	15	Not rated		Not rated	
840: Lavaspring-----	55	Limitations Saturation < 2' depth	1.00	Limitations Permeability > 2"/hr (seepage)	1.00
Trespass-----	25	Limitations Saturation between 2-4' Shrink-swell (LEP 3-6)	0.87 0.50	Limitations Permeability > 2"/hr (seepage)	1.00
Lavaspring-----	10	Limitations Saturation < 2' depth	1.00	Limitations Permeability > 2"/hr (seepage)	1.00
850: Lunder-----	90	Limitations Thin layer Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 1.00 0.50	Limitations Depth to pan < 20" Slopes 2 to 7%	1.00 0.31
851: Lunder-----	50	Limitations Thin layer Shrink-swell (LEP >6) MH or CH Unified and PI <40%	1.00 1.00 0.50	Limitations Depth to pan < 20" Slopes > 7%	1.00 1.00
Leviathan-----	35	No limitations		Limitations Slopes > 7%	1.00
860: Hardnut-----	55	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 7% Depth to bedrock < 20"	1.00 1.00

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
Ocashe-----	30	Limitations Thin layer	1.00	Limitations Slopes > 7% Depth to bedrock < 20" Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
870: Epvip-----	40	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Depth to bedrock < 20" Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Domehill-----	30	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
Ashflat-----	15	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 0.50
871: Halfash-----	50	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Depth to bedrock < 20" Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Domehill-----	35	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Depth to bedrock < 20" Slopes > 7% Permeability .6-2"/hr (some seepage)	1.00 1.00 0.50
872: Epvip-----	40	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 7% Depth to bedrock < 20" Permeability > 2"/hr (seepage)	1.00 1.00 1.00
Vetash-----	25	Limitations Shrink-swell (LEP 3-6)	0.50	Limitations Slopes > 7% Permeability > 2"/hr (seepage)	1.00 1.00
Epvip-----	20	Limitations Thin layer Shrink-swell (LEP 3-6)	1.00 0.50	Limitations Slopes > 7% Depth to bedrock < 20" Permeability > 2"/hr (seepage)	1.00 1.00 1.00

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
873:					
Epvip-----	35	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Hardnut-----	35	Limitations		Limitations	
		Thin layer	1.00	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock < 20"	1.00
Vetash-----	15	Limitations		Limitations	
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
880:					
Mopana-----	90	Limitations		Limitations	
		Thin layer	1.00	Depth to pan < 20"	1.00
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%	0.08
890:					
Masonic-----	40	Limitations		Limitations	
		Thin layer	0.99	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.89	Permeability > 2"/hr (seepage)	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock < 20"	0.99
Epvip-----	30	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
Domehill-----	15	Limitations		Limitations	
		Thin layer	1.00	Depth to bedrock < 20"	1.00
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%	1.00
				Permeability .6-2"/hr (some seepage)	0.50
900:					
Brokenhoe-----	60	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		Fragments (>3") > 35%	1.00	Depth to pan < 20"	0.99
		Thin layer	0.99		
Fisherdig-----	25	Limitations		Limitations	
		Thin layer	1.00	Depth to pan < 20"	1.00
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%	0.31
		Fragments (>3") 15-35%	0.94		

TABLE 21.-- Management--Continued

Map symbol and soil name	Pct.	Embankments, Dikes and Levees		Pond Reservoir Area	
		Limitation	Value	Limitation	Value
910: Indian Creek-----	60	Limitations Shrink-swell (LEP >6) Thin layer MH or CH Unified and PI <40%	1.00 0.99 0.50	Limitations Permeability > 2"/hr (seepage) Depth to pan < 20" Slopes 2 to 7%	1.00 0.99 0.31
Haybourne-----	25	No limitations		Limitations Permeability > 2"/hr (seepage)	1.00
920: Aquic Torrifluvents-----	35	Limitations Fragments (>3") > 35% Seepage problem Saturation between 2-4'	1.00 1.00 0.53	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.08
Conway-----	25	Limitations Saturation between 2-4'	0.95	Limitations Permeability > 2"/hr (seepage)	1.00
Torrifluventic Haploxerolls-----	25	Limitations Fragments (>3") > 35% Seepage problem	1.00 1.00	Limitations Permeability > 2"/hr (seepage) Slopes 2 to 7%	1.00 0.08
930: Lavaspring-----	60	Limitations Saturation between 2-4'	0.18	Limitations Permeability > 2"/hr (seepage)	1.00
Lavaspring-----	25	Limitations Saturation < 2' depth	1.00	Limitations Permeability > 2"/hr (seepage)	1.00
960: Rose Creek-----	85	Limitations Saturation between 2-4' High piping potential	0.95 0.22	Limitations Permeability > 2"/hr (seepage)	1.00
998: Dumps-----	60	Not rated		Not rated	
Pits-----	30	Not rated		Not rated	
999: Water-----	100	Not rated		Not rated	

The interpretation for pond reservoir areas evaluates the following soil properties at variable depths in the soil: slope, depth to hard or soft bedrock, depth to cemented pans, marly textures, gypsum content and permeability that is too high allowing seepage.

The interpretation for embankments evaluates the following soil properties at variable depths in the soil: ponding, wetness, depth to restrictive layer, fragments greater than 3 inches, salinity (EC), Unified classes for high organic content (PT, OL, OH), Unified classes that are hard to pack (MH, CH), permeability that is too high allowing seepage, and piping as determined by Atterberg limits of liquid limit (LL) and plasticity index (PI), sodium content (SAR) and gypsum content.

TABLE 22.--Water Management Irrigation Systems

Pacific Southwest MLRA Office Interpretations

The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.

The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The rating is based on the limitation with the highest value. Only five highest value limitations are listed. There may be more limitations.

Fine earth fractions and coarse fragments are reported on a weight basis.

A brief rating criteria summary and abbreviations are listed on the last page of this report.

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
100: Lithnip-----	40	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Hawkinspeak-----	30	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
101: Lithnip-----	40	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	25	Not rated		Not rated		Not rated	
Fishsnooze-----	20	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
102: Lithnip-----	40	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	25	Not rated		Not rated		Not rated	
Fishsnooze-----	20	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
103: Lithnip-----	40	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Meiss-----	30	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Hawkinspeak-----	15	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
110: Jobsis-----	45	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Whittell-----	25	Not rated		No limitations		Limitations Bedrock (soft) < 40" depth WEG = 1 or 2 Fragments (>3") > 10%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
111: Whittell-----	45	Not rated		No limitations		Limitations Bedrock (soft) < 40" depth WEG = 1 or 2 Fragments (>3") > 10%	1.00 1.00 1.00
Jobsis-----	25	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
112: Jobsis-----	45	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Whittell-----	25	Not rated		No limitations		Limitations Bedrock (soft) < 40" depth WEG = 1 or 2 Fragments (>3") > 10%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
113: Whittell-----	45	Not rated		No limitations		Limitations Bedrock (soft) < 40" depth WEG = 1 or 2 Fragments (>3") > 10%	1.00 1.00 1.00
Jobsis-----	25	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
120: Toiyabe-----	45	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Corbett-----	25	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
121: Toiyabe-----	45	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Corbett-----	35	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
122: Toiyabe-----	50	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Corbett-----	20	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
130: Sofgran-----	40	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Klauspeak-----	30	Limitations Lcos, cos, s or ls in surface WEG = 1 or 2 AWC < 2" to 40"	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface WEG = 1 or 2 Fragments (>3") > 10%	1.00 1.00 1.00
Temo-----	15	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
131: Sofgran-----	40	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Temo-----	25	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Shalgran-----	20	Limitations WEG = 1 or 2 AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations WEG = 1 or 2 Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
132: Sofgran-----	50	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Temo-----	25	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
140: Temo-----	40	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Dagget-----	30	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface Seepage problem Fragments (>3") > 10%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
150: Mottskel-----	85	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Fragments (>3") > 25%	1.00 1.00 0.50	No limitations		Limitations Sand textures in surface Seepage problem Fragments (>3") > 10%	1.00 1.00 1.00
160: Hopeval-----	50	Limitations Saturation < 24" depth during growing season Surface K-factor >.32 and slopes > 2% AWC from 2 - 6"	1.00 1.00 0.25	Limitations Saturation < 2' depth	1.00	Limitations Saturation < 24" depth during growing season Slopes > 2% AWC from 2 - 6"	1.00 1.00 0.25

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Hopeval-----	35	Limitations Surface K-factor >.32 and slopes > 2% Saturation between 24-36" during growing season AWC from 2 - 6"	1.00 0.47 0.33	Limitations Saturation < 2' depth	1.00	Limitations Slopes > 2% Saturation between 24-36" during growing season AWC from 2 - 6"	1.00 0.47 0.33
162: Corralval-----	45	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations Fragments (>3") > 10% AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Hopeval-----	45	Limitations Surface K-factor >.32 and slopes > 2% Saturation between 24-36" during growing season AWC from 2 - 6"	1.00 0.47 0.33	Limitations Saturation < 2' depth	1.00	Limitations Slopes > 2% Saturation between 24-36" during growing season AWC from 2 - 6"	1.00 0.47 0.33
170: Burnlake-----	60	Limitations AWC < 2" to 40" Slopes > 15%	1.00 1.00	No limitations		Limitations AWC < 2" to 40" Slopes > 2% Seepage problem	1.00 1.00 1.00
Roadcat-----	25	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
171: Stumpatil-----	65	Limitations AWC < 2" to 40" Slopes > 15%	1.00 1.00	No limitations		Limitations AWC < 2" to 40" Slopes > 2% Fragments (>3") > 10%	1.00 1.00 1.00
Morscour-----	20	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.98	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Fragments (>3") > 10%	1.00 1.00 1.00
172: Stumpatil-----	85	Limitations AWC < 2" to 40" Slopes > 15%	1.00 1.00	No limitations		Limitations AWC < 2" to 40" Slopes > 2% Fragments (>3") > 10%	1.00 1.00 1.00
173: Stumpatil-----	85	Limitations AWC < 2" to 40" Slopes > 15%	1.00 1.00	No limitations		Limitations AWC < 2" to 40" Slopes > 2% Fragments (>3") > 10%	1.00 1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
174: Stumpatil-----	35	Limitations AWC < 2" to 40" Slopes > 15%	1.00 1.00	No limitations		Limitations AWC < 2" to 40" Slopes > 2% Fragments (>3") > 10%	1.00 1.00 1.00
Sonorapass-----	30	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Snowtell-----	20	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
180: Shalgran-----	70	Limitations WEG = 1 or 2 AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations WEG = 1 or 2 Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
190: Hopeval-----	50	Limitations Saturation between 24-36" during growing season AWC from 2 - 6"	0.47 0.33	Limitations Saturation < 2' depth	1.00	Limitations Saturation between 24-36" during growing season AWC from 2 - 6"	0.47 0.33
Hopeval-----	35	Limitations Saturation < 24" depth during growing season AWC from 2 - 6"	1.00 0.25	Limitations Saturation < 2' depth	1.00	Limitations Saturation < 24" depth during growing season AWC from 2 - 6"	1.00 0.25
200: Cavebear-----	35	Limitations AWC < 2" to 40" Saturation between 24-36" during growing season	1.00 0.30	Limitations Saturation < 2' depth	1.00	Limitations AWC < 2" to 40" Slopes > 2% Seepage problem	1.00 1.00 1.00
Hopeval-----	25	Limitations Surface K-factor >.32 and slopes > 2% Saturation between 24-36" during growing season AWC from 2 - 6"	1.00 0.47 0.33	Limitations Saturation < 2' depth	1.00	Limitations Slopes > 2% Saturation between 24-36" during growing season AWC from 2 - 6"	1.00 0.47 0.33
Hopeval-----	20	Limitations Saturation < 24" depth during growing season Surface K-factor >.32 and slopes > 2% AWC from 2 - 6"	1.00 1.00 0.25	Limitations Saturation < 2' depth	1.00	Limitations Saturation < 24" depth during growing season Slopes > 2% AWC from 2 - 6"	1.00 1.00 0.25

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
210: Waterpeak-----	80	Limitations WEG = 1 or 2 AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations WEG = 1 or 2 Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
211: Waterpeak-----	50	Limitations WEG = 1 or 2 AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations WEG = 1 or 2 Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Buggin-----	25	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
212: Waterpeak-----	45	Limitations WEG = 1 or 2 AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations WEG = 1 or 2 Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Sofgran-----	25	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Temo-----	15	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
220: Hardtil-----	45	Limitations Lcos, cos, s or ls in surface Saturation < 24" depth during growing season Depth to bedrock (hard) < 40"	1.00 1.00 1.00	Limitations Saturation < 2' depth Bedrock depth < 20"	1.00 1.00	Limitations Sand textures in surface Saturation < 24" depth during growing season Depth to bedrock (hard) < 40"	1.00 1.00 1.00
Alpineco-----	25	Limitations Slopes > 15% AWC from 2 - 6" Fragments (>3") > 25%	1.00 0.80 0.50	No limitations		Limitations Fragments (>3") > 10% Slopes > 2% AWC from 2 - 6"	1.00 1.00 0.80
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
221: Hardtil-----	45	Limitations Lcos, cos, s or ls in surface Saturation < 24" depth during growing season Depth to bedrock (hard) < 40"	1.00 1.00 1.00	Limitations Saturation < 2' depth Bedrock depth < 20"	1.00 1.00	Limitations Sand textures in surface Saturation < 24" depth during growing season Depth to bedrock (hard) < 40"	1.00 1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Alpineco-----	25	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC from 2 - 6"	0.80			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC from 2 - 6"	0.80
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
222: Hardtil-----	40	Limitations Lcos, cos, s or ls in surface	1.00	Limitations Saturation < 2' depth	1.00	Limitations Sand textures in surface	1.00
		Saturation < 24" depth during growing season	1.00	Bedrock depth < 20"	1.00	Saturation < 24" depth during growing season	1.00
		Depth to bedrock (hard) < 40"	1.00			Depth to bedrock (hard) < 40"	1.00
Alpineco-----	25	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC from 2 - 6"	0.80			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC from 2 - 6"	0.80
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
230: Hawkinspeak-----	45	Limitations Depth to bedrock (hard) < 40"	1.00	No limitations		Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
Thief ridge-----	25	Not rated		Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
						Fragments (>3") > 10%	1.00
						AWC < 2" to 40"	1.00
Angelwhine-----	15	Limitations Slopes > 15%	1.00	No limitations		Limitations Slopes > 2%	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
						Fragments (>3") > 10%	1.00
231: Hawkinspeak-----	50	Limitations Depth to bedrock (hard) < 40"	1.00	No limitations		Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
Hawkinspeak-----	35	Limitations Depth to bedrock (hard) < 40"	1.00	No limitations		Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
232: Hawkinspeak-----	45	Limitations Depth to bedrock (hard) < 40"	1.00	No limitations		Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Hawkinspeak-----	25	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Hawkridge-----	15	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
233: Angelwhine-----	30	Limitations Slopes > 15% AWC < 2" to 40"	1.00 1.00	No limitations		Limitations Slopes > 2% AWC < 2" to 40" Fragments (>3") > 10%	1.00 1.00 1.00
Hawkinspeak-----	30	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Hawkridge-----	25	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
234: Hawkinspeak-----	40	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Hawkinspeak-----	25	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Thiefridge-----	20	Not rated		Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
235: Hawkinspeak-----	35	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Hawkinspeak-----	30	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Angelwhine-----	20	Limitations Slopes > 15% AWC < 2" to 40"	1.00 1.00	No limitations		Limitations Slopes > 2% AWC < 2" to 40" Fragments (>3") > 10%	1.00 1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
240: Granylith-----	45	Limitations Lcos, cos, s or ls in surface Saturation < 24" depth during growing season Depth to bedrock (hard) < 40"	1.00 1.00 1.00	Limitations Saturation < 2' depth Bedrock depth < 20"	1.00 1.00	Limitations Sand textures in surface Saturation < 24" depth during growing season Depth to bedrock (hard) < 40"	1.00 1.00 1.00
Hargran-----	25	Not rated		No limitations		Limitations Fragments (>3") > 10% Slopes > 2% Depth to bedrock (hard) < 40"	1.00 1.00 0.87
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
250: Florand-----	40	Limitations Slopes > 15% AWC from 2 - 6" Bedrock (soft) < 40" depth	1.00 0.80 0.18	No limitations		Limitations Slopes > 2% Fragments (>3") > 10% AWC from 2 - 6"	1.00 1.00 0.80
Lostridge-----	30	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.99	No limitations		Limitations AWC < 2" to 40" Slopes > 2% Bedrock (soft) < 40" depth	1.00 1.00 0.99
Fishsnooze-----	15	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
260: Hawkridge-----	35	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Hawkinspeak-----	30	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Hawkinspeak-----	20	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
261: Hawkridge-----	30	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Lithnip-----	25	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Hawkinspeak-----	20	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
262: Domehill-----	50	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Kiote-----	35	Limitations Slopes > 15% AWC from 2 - 6"	1.00 0.59	No limitations		Limitations Slopes > 2% AWC from 2 - 6"	1.00 0.59
270: Duco-----	40	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Smallcone-----	30	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.98	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Seepage problem	1.00 1.00 1.00
Cagle-----	15	Limitations Slopes > 15% Bedrock (soft) < 40" depth AWC from 2 - 6"	1.00 0.99 0.95	No limitations		Limitations Slopes > 2% Bedrock (soft) < 40" depth AWC from 2 - 6"	1.00 0.99 0.95
271: Duco-----	40	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Vetagrande-----	25	Limitations AWC < 2" to 40" Slopes > 15%	1.00 1.00	No limitations		Limitations AWC < 2" to 40" Slopes > 2%	1.00 1.00
Pinenut-----	20	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.96	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Fragments (>3") > 10%	1.00 1.00 1.00
280: Longcreek-----	50	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Devada-----	35	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40"	1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Fragments (>3") > 10%	1.00 1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
290: Pernty-----	55	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Chen-----	30	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes 6 to 15%	1.00 1.00 0.40	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
310: Bagval-----	40	No limitations		No limitations		Limitations Slopes > 2%	1.00
Bagval-----	25	No limitations		No limitations		Limitations Slopes > 2%	1.00
Wetbag-----	15	Limitations Saturation between 24-36" during growing season	0.50	Limitations Saturation < 2' depth	1.00	Limitations Slopes > 2%	1.00
Wetbag-----	10	Not rated		Limitations Saturation < 2' depth	1.00	Limitations Saturation < 24" depth during growing season WEG = 1 or 2 Slopes > 2%	1.00 1.00 1.00
320: Franktown-----	75	Not rated		Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
330: Oest-----	85	Limitations AWC < 2" to 40" Fragments (>3") > 25%	1.00 0.50	No limitations		Limitations Fragments (>3") > 10% AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
340: Aspocket-----	55	Limitations Slopes > 15% AWC from 2 - 6" Fragments (>3") > 25%	1.00 0.75 0.50	No limitations		Limitations Fragments (>3") > 10% Slopes > 2% AWC from 2 - 6"	1.00 1.00 0.75
Aspocket-----	30	Limitations Slopes > 15% AWC from 2 - 6" Fragments (>3") > 25%	1.00 0.75 0.50	No limitations		Limitations Fragments (>3") > 10% Slopes > 2% AWC from 2 - 6"	1.00 1.00 0.75

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
350: Leroman-----	45	Limitations Bedrock (soft) < 40" depth AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Bedrock (soft) < 40" depth AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Chenhigh-----	20	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Celeridge-----	10	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Dogbed-----	10	Limitations Slopes > 15% AWC from 2 - 6"	1.00 0.94	No limitations		Limitations Slopes > 2% AWC from 2 - 6"	1.00 0.94
360: Monibasin-----	70	Limitations AWC from 2 - 6" Fragments (>3") > 25% Slopes 6 to 15%	0.68 0.50 0.30	No limitations		Limitations Fragments (>3") > 10% Slopes > 2% AWC from 2 - 6"	1.00 1.00 0.68
Vermdig-----	15	Limitations AWC from 2 - 6"	0.47	Limitations Saturation < 2' depth Saturation < 2' depth (perched)	1.00 1.00	Limitations Slopes > 2% AWC from 2 - 6"	1.00 0.47
370: Celeridge-----	30	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Gerdog-----	25	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Loope-----	20	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Pinew-----	10	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.96	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Fragments (>3") > 10%	1.00 1.00 1.00
380: Joecut-----	40	Not rated		No limitations		Limitations Slopes > 2% Fragments (>3") > 10%	1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Celeridge-----	20	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Joecut-----	15	Not rated		No limitations		Limitations WEG = 1 or 2 Slopes > 2%	1.00 1.00
Gerdog-----	10	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
381: Heenlake-----	15	Limitations Slopes > 15% AWC < 2" to 40" Bedrock (soft) < 40" depth	1.00 1.00 0.97	No limitations		Limitations Fragments (>3") > 10% Slopes > 2% AWC < 2" to 40"	1.00 1.00 1.00
Loope-----	10	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Joecut-----	30	Limitations Slopes > 15%	1.00	No limitations		Limitations Slopes > 2% Fragments (>3") > 10%	1.00 1.00
Joecut-----	30	Not rated		No limitations		Limitations WEG = 1 or 2 Slopes > 2%	1.00 1.00
382: Joecut-----	55	Limitations Slopes > 15%	1.00	No limitations		Limitations Slopes > 2% Fragments (>3") > 10%	1.00 1.00
Joecut-----	30	Not rated		No limitations		Limitations WEG = 1 or 2 Slopes > 2%	1.00 1.00
390: Heenlake-----	40	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.97	No limitations		Limitations Fragments (>3") > 10% AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Loope-----	30	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Chenhigh-----	15	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
391: Heenlake-----	40	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC < 2" to 40"	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.97			AWC < 2" to 40"	1.00
Loope-----	25	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
Dogbed-----	20	Limitations Slopes > 15%	1.00	No limitations		Limitations Slopes > 2%	1.00
		AWC from 2 - 6"	0.94			AWC from 2 - 6"	0.94
392: Heenlake-----	50	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.97			AWC < 2" to 40"	1.00
Loope-----	35	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
400: Pinew-----	35	Limitations AWC < 2" to 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.96			Fragments (>3") > 10%	1.00
Carshal-----	25	Limitations AWC < 2" to 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.98			Bedrock (soft) < 40" depth	0.98
Loope-----	15	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
Celeridge-----	10	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			AWC < 2" to 40"	1.00
401: Pinew-----	75	Limitations AWC < 2" to 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.96			Fragments (>3") > 10%	1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
410: Wolfcut-----	85	Not rated		No limitations		Limitations WEG = 1 or 2 Fragments (>3") > 10% Slopes > 2%	1.00 1.00 1.00
420: Buggin-----	75	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
430: Newcone-----	75	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.98	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Bedrock (soft) < 40" depth	1.00 1.00 0.98
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
440: Dogbed-----	35	Limitations Slopes > 15% AWC from 2 - 6"	1.00 0.94	No limitations		Limitations Slopes > 2% AWC from 2 - 6"	1.00 0.94
Celeridge-----	25	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Carshal-----	20	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.98	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Bedrock (soft) < 40" depth	1.00 1.00 0.98
Joecut-----	10	Not rated		No limitations		Limitations WEG = 1 or 2 Slopes > 2%	1.00 1.00
450: Carshal-----	55	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.98	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Bedrock (soft) < 40" depth	1.00 1.00 0.98
Loope-----	20	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
460: Toejom-----	45	Limitations WEG = 1 or 2 AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations WEG = 1 or 2 AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Pimogran-----	30	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
461: Toejom-----	40	Limitations WEG = 1 or 2 AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations WEG = 1 or 2 AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Pimogran-----	35	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
462: Toejom-----	40	Limitations WEG = 1 or 2 AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations WEG = 1 or 2 AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Glenbrook-----	30	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Pimogran-----	20	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
470: Sumeadow-----	55	Not rated		No limitations		Limitations WEG = 1 or 2 Slopes > 2% AWC < 2" to 40"	1.00 1.00 1.00
Lostridge-----	30	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.99	No limitations		Limitations AWC < 2" to 40" Slopes > 2% Bedrock (soft) < 40" depth	1.00 1.00 0.99
471: Sumeadow-----	55	Not rated		No limitations		Limitations WEG = 1 or 2 Slopes > 2% AWC < 2" to 40"	1.00 1.00 1.00
Sumeadow-----	30	Not rated		No limitations		Limitations WEG = 1 or 2 Slopes > 2% AWC < 2" to 40"	1.00 1.00 1.00
480: Aspetill-----	60	Limitations AWC < 2" to 40" Slopes > 15% Fragments (>3") > 25%	1.00 1.00 0.50	No limitations		Limitations Fragments (>3") > 10% Slopes > 2% AWC < 2" to 40"	1.00 1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Aspetill-----	25	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC < 2" to 40"	1.00
481: Aspetill-----	50	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC < 2" to 40"	1.00
Aspetill-----	35	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC from 2 - 6"	0.97			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC from 2 - 6"	0.97
490: Cloudburst-----	50	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC from 2 - 6"	0.90			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC from 2 - 6"	0.90
Murain-----	35	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC from 2 - 6"	0.80			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC from 2 - 6"	0.80
491: Cloudburst-----	45	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC from 2 - 6"	0.90			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC from 2 - 6"	0.90
Murain-----	25	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC from 2 - 6"	0.80			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC from 2 - 6"	0.80
Hardtil-----	15	Limitations Lcos, cos, s or ls in surface	1.00	Limitations Saturation < 2' depth	1.00	Limitations Sand textures in surface	1.00
		Saturation < 24" depth during growing season	1.00	Bedrock depth < 20"	1.00	Saturation < 24" depth during growing season	1.00
		Depth to bedrock (hard) < 40"	1.00			Depth to bedrock (hard) < 40"	1.00
500: Chrisflat-----	90	Limitations AWC from 2 - 6"	0.90	No limitations		Limitations Fragments (>3") > 10%	1.00
		Fragments (>3") > 25%	0.50			Slopes > 2%	1.00
		Slopes 6 to 15%	0.30			AWC from 2 - 6"	0.90

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
510: Rubble Land-----	40	Not rated		Not rated		Not rated	
Lithnip-----	20	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
Fishsnooze-----	10	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
511: Rock Outcrop-----	40	Not rated		Not rated		Not rated	
Snowtell-----	30	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Forsell-----	15	Limitations AWC < 2" to 40" Slopes > 15% Fragments (>3") > 25%	1.00 1.00 0.50	No limitations		Limitations Fragments (>3") > 10% Slopes > 2% AWC < 2" to 40"	1.00 1.00 1.00
512: Rock Outcrop-----	50	Not rated		Not rated		Not rated	
Snowtell-----	40	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
513: Rubble Land-----	40	Not rated		Not rated		Not rated	
Holdon-----	30	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
520: Canfire-----	40	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Crispy-----	35	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.96	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Bedrock (soft) < 40" depth	1.00 1.00 0.96
Rock Outcrop-----	10	Not rated		Not rated		Not rated	

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
530: Elaero-----	35	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Lockgate-----	25	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Granhogany-----	15	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Granidry-----	10	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.96	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Fragments (>3") > 10%	1.00 1.00 1.00
531: Elaero-----	55	Limitations AWC < 2" to 40" Bedrock (soft) < 40" depth Slopes 6 to 15%	1.00 0.97 0.30	No limitations		Limitations AWC < 2" to 40" Slopes > 2% Fragments (>3") > 10%	1.00 1.00 1.00
Elaero-----	30	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
532: Elaero-----	55	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Granidry-----	20	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.96	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Fragments (>3") > 10%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
540: Lostcannon-----	45	Limitations AWC < 2" to 40" Slopes > 15%	1.00 1.00	No limitations		Limitations Slopes > 2% AWC < 2" to 40" Fragments (>3") > 10%	1.00 1.00 1.00
Lostcannon-----	40	Limitations AWC < 2" to 40" Slopes > 15%	1.00 1.00	No limitations		Limitations Slopes > 2% AWC < 2" to 40" Fragments (>3") > 10%	1.00 1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
560: Dunderberg-----	30	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC < 2" to 40"	1.00
Dunderberg-----	25	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC < 2" to 40"	1.00
Conwayridge-----	20	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC < 2" to 40"	0.99			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC < 2" to 40"	0.99
Dunderberg-----	10	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC < 2" to 40"	1.00
561: Dunderberg-----	40	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC < 2" to 40"	1.00
Dunderberg-----	30	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC < 2" to 40"	1.00
Dunderberg-----	15	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC < 2" to 40"	1.00
570: Angelwhine-----	35	Limitations Slopes > 15%	1.00	No limitations		Limitations Slopes > 2%	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
						Fragments (>3") > 10%	1.00
Hawkinspeak-----	25	Limitations Depth to bedrock (hard) < 40"	1.00	No limitations		Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
Hawkridge-----	25	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
580: Murain-----	50	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC from 2 - 6"	0.80			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC from 2 - 6"	0.80
Shorthike-----	20	Limitations Lcos, cos, s or ls in surface	1.00	No limitations		Limitations Sand textures in surface	1.00
		Slopes > 15%	1.00			Fragments (>3") > 10%	1.00
		AWC < 2" to 40"	1.00			Slopes > 2%	1.00
Murain-----	15	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC from 2 - 6"	0.80			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC from 2 - 6"	0.80
581: Murain-----	45	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC from 2 - 6"	0.80			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC from 2 - 6"	0.80
Murain-----	40	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC from 2 - 6"	0.80			Slopes > 2%	1.00
		Fragments (>3") > 25%	0.50			AWC from 2 - 6"	0.80
590: Loope-----	40	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
Heenlake-----	30	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC < 2" to 40"	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.97			AWC < 2" to 40"	1.00
Carshal-----	15	Limitations AWC < 2" to 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.98			Bedrock (soft) < 40" depth	0.98
591: Loope-----	40	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
Heenlake-----	30	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.97			AWC < 2" to 40"	1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Celeridge-----	15	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
592: Loope-----	30	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Pinew-----	30	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.96	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Fragments (>3") > 10%	1.00 1.00 1.00
Heenlake-----	25	Limitations Slopes > 15% AWC < 2" to 40" Bedrock (soft) < 40" depth	1.00 1.00 0.97	No limitations		Limitations Fragments (>3") > 10% Slopes > 2% AWC < 2" to 40"	1.00 1.00 1.00
600: Snowtell-----	45	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Sonorapass-----	25	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
610: Forsell-----	50	Limitations AWC < 2" to 40" Slopes > 15% Fragments (>3") > 25%	1.00 1.00 0.50	No limitations		Limitations Fragments (>3") > 10% Slopes > 2% AWC < 2" to 40"	1.00 1.00 1.00
Snowtell-----	25	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
611: Forsell-----	50	Limitations Slopes > 15% AWC < 2" to 40" Fragments (>3") > 25%	1.00 1.00 0.50	No limitations		Limitations Fragments (>3") > 10% Slopes > 2% AWC < 2" to 40"	1.00 1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Snowtell-----	25	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
620: Indian Creek-----	90	Limitations Depth to pan <40" AWC < 2" to 40" SAR from 0.5 - 10 to 40" depth	1.00 1.00 0.01	Limitations Depth to pan <= 20" SAR from 0.5 - 10 to 40" depth	0.99 0.01	Limitations Depth to pan <40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
630: Olac-----	40	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Flex-----	25	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.97	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Bedrock (soft) < 40" depth	1.00 1.00 0.97
Duco-----	20	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
640: Koontz-----	55	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.97	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Bedrock (soft) < 40" depth	1.00 1.00 0.97
Nosrac-----	30	Limitations Slopes > 15% AWC from 2 - 6"	1.00 0.98	No limitations		Limitations Slopes > 2% Fragments (>3") > 10% AWC from 2 - 6"	1.00 1.00 0.98
650: Shree-----	90	Limitations AWC < 2" to 40" Slopes 6 to 15%	1.00 0.40	No limitations		Limitations Slopes > 2% AWC < 2" to 40" Fragments (>3") > 10%	1.00 1.00 1.00
651: Shree-----	50	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations AWC < 2" to 40" Fragments (>3") > 10% Slopes > 2%	1.00 1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Holbrook-----	35	Limitations AWC < 2" to 40"	1.00	Limitations SAR from 0.5 - 10 to 40" depth	0.14	Limitations Fragments (>3") > 10%	1.00
		Fragments (>3") > 25%	0.50			AWC < 2" to 40"	1.00
		SAR from 0.5 - 10 to 40" depth	0.14			Slopes > 2%	1.00
660: Delhew-----	35	Limitations Lcos, cos, s or ls in surface	1.00	No limitations		Limitations Sand textures in surface	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
Grandridge-----	30	Limitations AWC < 2" to 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.96			Fragments (>3") > 10%	1.00
Bakscratch-----	20	Limitations AWC < 2" to 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.96			Fragments (>3") > 10%	1.00
670: Springmeyer-----	85	Limitations AWC from 2 - 6"	0.21	No limitations		Limitations Slopes > 2%	1.00
						AWC from 2 - 6"	0.21
671: Springmeyer-----	50	Limitations AWC from 2 - 6"	0.36	No limitations		Limitations Slopes > 2%	1.00
						AWC from 2 - 6"	0.36
Cassiro-----	35	Limitations AWC from 2 - 6"	0.92	No limitations		Limitations Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.37			AWC from 2 - 6"	0.92
						Bedrock (soft) < 40" depth	0.37
680: Rolldown-----	40	Limitations Slopes > 15%	1.00	No limitations		Limitations Slopes > 2%	1.00
		AWC from 2 - 6"	0.90			Fragments (>3") > 10%	1.00
						AWC from 2 - 6"	0.90
Mountpatterson-----	25	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			AWC < 2" to 40"	1.00
Rubble Land-----	20	Not rated		Not rated		Not rated	
700: Coldtree-----	75	Limitations Lcos, cos, s or ls in surface	1.00	No limitations		Limitations Sand textures in surface	1.00
		Slopes > 15%	1.00			Fragments (>3") > 10%	1.00
		AWC < 2" to 40"	1.00			Slopes > 2%	1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Rubble Land-----	10	Not rated		Not rated		Not rated	
710: Bakscratch-----	45	Limitations AWC < 2" to 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.96			Fragments (>3") > 10%	1.00
Grandridge-----	25	Limitations AWC < 2" to 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.96			Fragments (>3") > 10%	1.00
McTom-----	15	Not rated		No limitations		Limitations Bedrock (soft) < 40" depth	1.00
						Fragments (>3") > 10%	1.00
						AWC < 2" to 40"	1.00
720: Nohelp-----	55	Limitations Slopes > 15%	1.00	No limitations		Limitations Slopes > 2%	1.00
		AWC from 2 - 6"	0.70			Fragments (>3") > 10%	1.00
		Fragments (>3") > 25%	0.50			AWC from 2 - 6"	0.70
Joenchris-----	35	Limitations Slopes > 15%	1.00	No limitations		Limitations Slopes > 2%	1.00
		AWC from 2 - 6"	0.30			Fragments (>3") > 10%	1.00
						AWC from 2 - 6"	0.30
730: Burchflat-----	55	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Depth to bedrock (hard) < 40"	0.99			AWC < 2" to 40"	1.00
Loope-----	30	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes 6 to 15%	0.40			Slopes > 2%	1.00
731: Burchflat-----	45	Limitations Slopes > 15%	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		AWC < 2" to 40"	1.00			Slopes > 2%	1.00
		Depth to bedrock (hard) < 40"	0.99			AWC < 2" to 40"	1.00
Celeridge-----	20	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			AWC < 2" to 40"	1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Loope-----	20	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
740: Jackflat-----	55	Limitations Slopes > 15% AWC from 2 - 6" Fragments (>3") > 25%	1.00 0.97 0.50	No limitations		Limitations Fragments (>3") > 10% Slopes > 2% AWC from 2 - 6"	1.00 1.00 0.97
Grandridge-----	30	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.96	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Fragments (>3") > 10%	1.00 1.00 1.00
760: Thief ridge-----	45	Not rated		Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Thief ridge-----	30	Not rated		Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
770: Sweetmount-----	50	Limitations Slopes > 15%	1.00	No limitations		Limitations Slopes > 2% Fragments (>3") > 10%	1.00 1.00
Hawkinspeak-----	20	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Hawkridge-----	15	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
780: Granhogany-----	65	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
790: Dab-----	50	Limitations AWC < 2" to 40" Slopes > 15%	1.00 1.00	No limitations		Limitations AWC < 2" to 40" Slopes > 2%	1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Dab-----	35	Limitations AWC < 2" to 40" Slopes > 15%	1.00 1.00	No limitations		Limitations AWC < 2" to 40" Slopes > 2%	1.00 1.00
791: Dab-----	45	Limitations AWC < 2" to 40" Slopes > 15%	1.00 1.00	No limitations		Limitations AWC < 2" to 40" Slopes > 2%	1.00 1.00
Longday-----	25	Limitations Slopes > 15% AWC from 2 - 6"	1.00 0.95	No limitations		Limitations Slopes > 2% Fragments (>3") > 10% AWC from 2 - 6"	1.00 1.00 0.95
Thiefbridge-----	15	Not rated		Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
792: Dab-----	35	Limitations AWC < 2" to 40" Slopes > 15%	1.00 1.00	No limitations		Limitations AWC < 2" to 40" Slopes > 2%	1.00 1.00
Aspocket-----	25	Limitations Slopes > 15% AWC from 2 - 6" Fragments (>3") > 25%	1.00 0.75 0.50	No limitations		Limitations Fragments (>3") > 10% Slopes > 2% AWC from 2 - 6"	1.00 1.00 0.75
Hawkridge-----	25	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40" AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
800: Grandridge-----	60	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.96	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Fragments (>3") > 10%	1.00 1.00 1.00
Delhew-----	30	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
801: Grandridge-----	40	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.96	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40" Slopes > 2% Fragments (>3") > 10%	1.00 1.00 1.00
Delhew-----	25	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Bullville-----	20	Limitations Bedrock (soft) < 40" depth AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Bedrock (soft) < 40" depth AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
810: Corbett-----	55	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	No limitations		Limitations Sand textures in surface Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Toiyabe-----	20	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface Fragments (>3") > 10% AWC < 2" to 40"	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
820: Freelpeak-----	50	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.99	No limitations		Limitations Fragments (>3") > 10% AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Windyridge-----	25	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	10	Not rated		Not rated		Not rated	
830: Windyridge-----	45	Limitations Lcos, cos, s or ls in surface AWC < 2" to 40" Slopes > 15%	1.00 1.00 1.00	Limitations Bedrock depth < 20"	1.00	Limitations Sand textures in surface AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Freelpeak-----	25	Limitations AWC < 2" to 40" Slopes > 15% Bedrock (soft) < 40" depth	1.00 1.00 0.99	No limitations		Limitations Fragments (>3") > 10% AWC < 2" to 40" Slopes > 2%	1.00 1.00 1.00
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
840: Lavaspring-----	55	Limitations Saturation between 24-36" during growing season	0.47	Limitations Saturation < 2' depth	1.00	Limitations Saturation between 24-36" during growing season	0.47
Trespass-----	25	Limitations AWC from 2 - 6"	0.63	No limitations		Limitations AWC from 2 - 6"	0.63
Lavaspring-----	10	Limitations Saturation < 24" depth during growing season	1.00	Limitations Saturation < 2' depth	1.00	Limitations Saturation < 24" depth during growing season	1.00

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
850: Lunder-----	90	Limitations Depth to pan <40"	1.00	Limitations Depth to pan <= 20"	1.00	Limitations Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
						Fragments (>3") > 10%	1.00
851: Lunder-----	50	Limitations Depth to pan <40"	1.00	Limitations Depth to pan <= 20"	1.00	Limitations Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
Leviathan-----	35	Limitations Slopes > 15%	1.00	No limitations		Limitations Slopes > 2%	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
						Fragments (>3") > 10%	1.00
860: Hardnut-----	55	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
Ocashe-----	30	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
870: Epvip-----	40	Limitations AWC < 2" to 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.96			Bedrock (soft) < 40" depth	0.96
Domehill-----	30	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
Ashflat-----	15	Limitations Slopes 6 to 15%	0.30	No limitations		Limitations Slopes > 2%	1.00
871: Halfash-----	50	Limitations AWC < 2" to 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.96			Bedrock (soft) < 40" depth	0.96
Domehill-----	35	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
872: Epvip-----	40	Limitations AWC < 2" to 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.96			Bedrock (soft) < 40" depth	0.96

TABLE 22.--Water Management Irrigation Systems -- Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
Vetash-----	25	Limitations Slopes > 15%	1.00	No limitations		Limitations Slopes > 2%	1.00
Epvip-----	20	Limitations AWC < 2" to 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.96			Bedrock (soft) < 40" depth	0.96
873: Epvip-----	35	Limitations AWC < 2" to 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.96			Bedrock (soft) < 40" depth	0.96
Hardnut-----	35	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
Vetash-----	15	Limitations Slopes > 15%	1.00	No limitations		Limitations Slopes > 2%	1.00
880: Mopana-----	90	Limitations Depth to pan <40"	1.00	Limitations Depth to pan <= 20"	1.00	Limitations Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
						Slopes > 2%	1.00
890: Masonic-----	40	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			AWC < 2" to 40"	1.00
		Bedrock (soft) < 40" depth	0.97			Slopes > 2%	1.00
Epvip-----	30	Limitations AWC < 2" to 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
		Bedrock (soft) < 40" depth	0.96			Bedrock (soft) < 40" depth	0.96
Domehill-----	15	Limitations Depth to bedrock (hard) < 40"	1.00	Limitations Bedrock depth < 20"	1.00	Limitations Depth to bedrock (hard) < 40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes 6 to 15%	0.30			Slopes > 2%	1.00
900: Brokenhoe-----	60	Limitations Depth to pan <40"	1.00	Limitations Depth to pan <= 20"	0.99	Limitations Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00			Fragments (>3") > 10%	1.00
		Slopes > 15%	1.00			AWC < 2" to 40"	1.00
Fisherdig-----	25	Limitations Depth to pan <40"	1.00	Limitations Depth to pan <= 20"	1.00	Limitations Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Fragments (>3") > 25%	0.50			Fragments (>3") > 10%	1.00

TABLE 22.--Water Management Irrigation Systems - Continued

Map symbol and soil name	Pct.	Sprinkler Irrigation		Drip or Trickle Irrigation		Furrow Irrigation	
		Limitation	Value	Limitation	Value	Limitation	Value
910: Indian Creek-----	60	Limitations Depth to pan <40"	1.00	Limitations Depth to pan <= 20"	0.99	Limitations Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	SAR from 0.5 - 10 to 40" depth	0.01	AWC < 2" to 40"	1.00
		SAR from 0.5 - 10 to 40" depth	0.01			Slopes > 2%	1.00
Haybourne-----	25	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations AWC < 2" to 40"	1.00
920: Aquic Torrifluvents-	35	Not rated		Not rated		Not rated	
Conway-----	25	Limitations AWC < 2" to 40"	1.00	No limitations		Limitations AWC < 2" to 40"	1.00
		Saturation between 24-36" during growing season	0.70			Saturation between 24-36" during growing season	0.70
Torrifluventic Haploxerolls-----	25	Not rated		Not rated		Not rated	
930: Lavaspring-----	60	No limitations		No limitations		No limitations	
Lavaspring-----	25	Limitations Saturation between 24-36" during growing season	0.47	Limitations Saturation < 2' depth	1.00	Limitations Saturation between 24-36" during growing season	0.47
960: Rose Creek-----	85	Limitations Flooding >= frequent in growing season	1.00	Limitations Flooding >= frequent in growing season	1.00	Limitations Flooding >= frequent in growing season	1.00
		SAR from 0.5 - 10 to 40" depth	0.80	SAR from 0.5 - 10 to 40" depth	0.80	SAR from 0.5 - 10 to 40" depth	0.80
		Saturation between 24-36" during growing season	0.70			Saturation between 24-36" during growing season	0.70
998: Dumps-----	60	Not rated		Not rated		Not rated	
Pits-----	30	Not rated		Not rated		Not rated	
999: Water-----	100	Not rated		Not rated		Not rated	

The interpretation for sprinkler irrigation evaluates the following soil properties at variable depths in the soil: surface texture, clay content greater than 60%, flooding during the growing season, ponding, depth to wetness, available water content (AWC), slope, depth to hard or soft bedrock, depth to cemented pans, fragments greater than 75mm in size, sodium content (SAR), soil pH, clayey or sandy textures, and permeability less than .5cm/hr resulting in saturated soil conditions, soil erodibility expressed as a K-factor, electrical conductivity (EC), sodium content expressed as sodium adsorption ratio (SAR), sulfur content based on taxonomic placement.

The interpretation for drip or trickle irrigation evaluates the following soil properties at variable depths in the soil: flooding, ponding, depth to wetness, depth to hard or soft bedrock, depth to cemented pan, electrical conductivity (EC), sodium content expressed as sodium adsorption ratio (SAR), soil sulfur content based on taxonomic placement and permeability less than .5cm/hr.

The interpretation for furrow irrigation evaluates the following soil properties at variable depths in the soil: surface texture, clay content and smectitic mineralogy, flooding during the

growing season, ponding, depth to wetness, available water content, slope, depth to soft bedrock, depth to cemented pans, fragments greater than 75mm in size, sodium content (SAR), soil pH, clayey or sandy textures, and permeability less than .5cm/hr resulting in saturated soil conditions, permeability greater than 15cm/hr resulting in seepage, electrical conductivity (EC), sodium content expressed as sodium adsorption ration (SAR), sulfur content based on taxonomic placement.

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
					>10 inches	3-10 inches	4	10	40	200		
			Unified	AASHTO	Pct	Pct						
102: Lithnip-----	In				Pct	Pct					Pct	
	0-1	Extremely gravelly sandy loam	GP-GM	A-1	0-8	5-15	40-55	15-25	10-20	5-15	20-30	NP-5
	1-5	Very gravelly sandy loam, extremely gravelly sandy loam	GW-GM	A-1	0-5	5-15	25-45	15-35	5-25	0-20	20-30	NP-5
	5-15	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	
Fishsnooze-----	0-1	Very gravelly sandy loam	GM	A-1	0-10	0-10	45-60	35-50	25-40	15-30	20-30	NP-5
	1-9	Very gravelly coarse sandy loam, extremely gravelly coarse sandy loam, extremely gravelly sandy loam	GP-GM	A-1	0-15	0-15	25-45	15-35	10-25	5-15	20-30	NP-5
	9-13	Extremely gravelly coarse sandy loam, very gravelly coarse sandy loam, extremely gravelly sandy loam	GP-GM	A-1	0-15	10-30	35-55	15-35	10-25	5-15	20-30	NP-5
	13-35	Extremely cobbly coarse sandy loam, extremely gravelly sandy loam	GP-GM	A-1	0-15	20-60	25-65	10-45	10-25	5-15	20-30	NP-5
	35-45	Bedrock			---	---	---	---	---	---	---	---
103: Lithnip-----	0-2	Extremely gravelly sandy loam	GP-GM	A-1	0-8	5-15	40-55	15-25	10-20	5-15	20-30	NP-5
	2-5	Very gravelly sandy loam, extremely gravelly sandy loam	GW-GM	A-1	0-5	5-15	25-45	15-35	5-25	0-20	20-30	NP-5
	5-15	Bedrock			---	---	---	---	---	---	---	---
Meiss-----	0-6	Gravelly ash y loam	GM	A-7-5	0	10-25	50-80	45-75	40-70	25-50	42-67	9-16
	6-13	Gravelly ash y sandy loam, gravelly ash y loam	GM	A-7-5	0	4-24	50-80	45-75	39-72	29-56	31-60	9-16
	13-23	Bedrock			---	---	---	---	---	---	---	---
Hawkinspeak-----	0-3	Very gravelly sandy loam	GM, SM	A-2	5-25	5-20	55-70	50-65	40-55	25-35	20-30	NP-5
	3-9	Very gravelly sandy loam	GM	A-1, A-2	5-15	0-10	30-55	25-50	20-40	10-30	20-30	NP-5
	9-33	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	33-43	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

[illegible]

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
111: Whittell-----	In				Pct	Pct					Pct	
	0-0	Slightly decomposed plant material			0	0	---	---	---	---	---	---
	0-7	Very cobbly loamy coarse sand	SM	A-1-b	15-30	20-40	70-90	55-75	35-55	10-30	0-23	NP-2
	7-20	Very gravelly coarse sand, very cobbly loamy coarse sand, very stony loamy coarse sand, very gravelly loamy coarse sand	SP-SM	A-1-a	15-35	15-30	50-85	35-70	20-50	5-20	0-19	NP-2
	20-32	Very gravelly coarse sand, very cobbly loamy coarse sand, very stony loamy coarse sand, very gravelly loamy coarse sand, extremely stony loamy coarse sand	GP-GM	A-1-a	15-40	15-35	45-80	30-65	15-45	5-20	0-28	NP-2
	32-42	Bedrock			---	---	---	---	---	---	---	---
Jobsis-----	0-5	Very gravelly loamy coarse sand	SM, SP-SM	A-1	5-15	5-10	65-85	40-60	25-40	5-20	---	NP
	5-9	Very gravelly loamy coarse sand, very gravelly coarse sand	SM, SW-SM	A-1	0-10	0-10	55-75	25-50	15-30	5-15	---	NP
	9-17	Very gravelly loamy coarse sand, very gravelly coarse sand	SM, SW-SM	A-1	0-10	0-10	55-75	25-50	15-30	5-15	---	NP
	17-20	Very gravelly loamy coarse sand, very gravelly coarse sand	SM, SW-SM	A-1	0-10	0-10	55-75	25-50	15-30	5-15	---	NP
	20-30	Bedrock			---	---	---	---	---	---	---	---
					---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	
112: Jobsis-----	0-5	Very gravelly loamy coarse sand	SM, SP-SM	A-1	5-15	5-10	65-85	40-60	25-40	5-20	---	NP
	5-9	Very gravelly loamy coarse sand, very gravelly coarse sand	SM, SW-SM	A-1	0-10	0-10	55-75	25-50	15-30	5-15	---	NP
	9-17	Very gravelly loamy coarse sand, very gravelly coarse sand	SM, SW-SM	A-1	0-10	0-10	55-75	25-50	15-30	5-15	---	NP
	17-20	Very gravelly loamy coarse sand, very gravelly coarse sand	SM, SW-SM	A-1	0-10	0-10	55-75	25-50	15-30	5-15	---	NP
	20-30	Bedrock			---	---	---	---	---	---	---	---
					---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct 0	Pct 0	---	---	---	---		
Whittell-----	In 0-0	Slightly decomposed plant material									Pct ---	---
	0-7	Very cobbly loamy coarse sand	SM	A-1-b	15-30	20-40	70-90	55-75	35-55	10-30	0-23	NP-2
	7-20	Very gravelly coarse sand, very cobbly loamy coarse sand, very stony loamy coarse sand, very gravelly loamy coarse sand	SP-SM	A-1-a	15-35	15-30	50-85	35-70	20-50	5-20	0-19	NP-2
	20-32	Very gravelly coarse sand, very cobbly loamy coarse sand, very stony loamy coarse sand, very gravelly loamy coarse sand, extremely stony loamy coarse sand	GP-GM	A-1-a	15-40	15-35	45-80	30-65	15-45	5-20	0-28	NP-2
	32-42	Bedrock										
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
113: Whittell-----	0-0	Slightly decomposed plant material			0	0	---	---	---	---	---	---
	0-7	Very cobbly loamy coarse sand	SM	A-1-b	15-30	20-40	70-90	55-75	35-55	10-30	0-23	NP-2
	7-20	Very gravelly coarse sand, very cobbly loamy coarse sand, very stony loamy coarse sand, very gravelly loamy coarse sand	SP-SM	A-1-a	15-35	15-30	50-85	35-70	20-50	5-20	0-19	NP-2
	20-32	Very gravelly coarse sand, very cobbly loamy coarse sand, very stony loamy coarse sand, very gravelly loamy coarse sand, extremely stony loamy coarse sand	GP-GM	A-1-a	15-40	15-35	45-80	30-65	15-45	5-20	0-28	NP-2
	32-42	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

[illegible]

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
122: Toiyabe-----	0-9	Very bouldery loamy coarse sand	SM, SP-SM	A-1	25-50	8-18	65-85	50-75	25-40	5-20	---	NP
	9-16	Loamy coarse sand, gravelly loamy coarse sand, coarse sand	SM, SP-SM	A-1	0-5	0-10	70-100	60-85	20-50	5-20	---	NP
	16-26	Bedrock			---	---	---	---	---	---	---	---
Corbett-----	0-9	Very bouldery loamy coarse sand	SM, SP-SM	A-1	25-50	5-10	65-85	50-75	25-40	5-20	---	NP
	9-23	Gravelly loamy coarse sand, sand, gravelly loamy sand	SM, SP-SM	A-1	0	0-10	70-95	55-90	30-50	5-20	---	NP
	23-33	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
130: Sofgran-----	0-3	Gravelly loamy coarse sand	SM, SP-SM	A-1	5-25	0-10	80-90	60-70	40-50	5-15	0-14	NP
	3-6	Gravelly loamy coarse sand	SP-SM	A-1	0-10	0-10	70-80	50-60	30-40	5-10	0-14	NP
	6-9	Very gravelly loamy coarse sand, very gravelly coarse sand, gravelly loamy coarse sand	SM, SP-SM	A-1	0-10	0-10	70-85	40-60	10-30	5-15	---	NP
	9-19	Gravelly loamy coarse sand, very gravelly coarse sand, very gravelly loamy coarse sand	SM, SP-SM	A-1	0-10	0-10	70-85	25-45	10-20	5-15	---	NP
	19-27	Very gravelly coarse sand, very gravelly loamy coarse sand, gravelly loamy coarse sand	SM, SP-SM	A-1	0-10	0-10	70-85	40-60	10-30	5-15	---	NP
	27-45	Extremely gravelly loamy coarse sand, very gravelly loamy coarse sand	SM, SW-SM	A-1	0-10	10-40	55-75	10-35	10-25	5-15	---	NP
	45-60	Very gravelly loamy coarse sand, extremely gravelly loamy coarse sand	SM, SW-SM	A-1	0-10	10-30	50-75	25-50	15-30	5-15	---	NP

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Klauspeak-----	0-5	Gravelly loamy sand	SM, SP-SM	A-1	3-15	0-5	80-90	60-70	40-50	5-15	0-14	NP
	5-16	Gravelly loamy sand	SP-SM	A-1	0-15	0-15	70-80	50-60	30-40	5-10	0-14	NP
	16-22	Very stony loamy sand, very stony loamy coarse sand	SM, SP-SM	A-1	20-30	15-20	75-85	55-70	40-50	5-15	0-14	NP
	22-40	Very stony loamy coarse sand, very stony loamy sand	SM, SP-SM	A-1	15-30	15-20	75-85	55-70	40-50	5-15	0-14	NP
	40-60	Very cobbly coarse sand, very stony loamy coarse sand	SM, SP-SM	A-1	10-40	20-40	60-75	40-55	10-30	5-15	0-14	NP
Temo-----	0-10	Very gravelly loamy coarse sand	SM, SP-SM	A-1	5-15	5-10	65-85	35-55	25-40	5-20	---	NP
	10-16	Gravelly loamy coarse sand, coarse sand, gravelly coarse sand	SM, SP-SM	A-1	0	0-8	70-100	50-80	20-45	5-15	---	NP
	16-26	Bedrock			---	---	---	---	---	---	---	---
131: Sofgran-----	0-3	Gravelly loamy coarse sand	SM, SP-SM	A-1	5-25	0-10	80-90	60-70	40-50	5-15	0-14	NP
	3-6	Gravelly loamy coarse sand	SP-SM	A-1	0-10	0-10	70-80	50-60	30-40	5-10	0-14	NP
	6-9	Very gravelly loamy coarse sand, very gravelly coarse sand, gravelly loamy coarse sand	SM, SP-SM	A-1	0-10	0-10	70-85	40-60	10-30	5-15	---	NP
	9-19	Gravelly loamy coarse sand, very gravelly coarse sand, very gravelly loamy coarse sand	SM, SP-SM	A-1	0-10	0-10	70-85	25-45	10-20	5-15	---	NP
	19-27	Very gravelly coarse sand, very gravelly loamy coarse sand, gravelly loamy coarse sand	SM, SP-SM	A-1	0-10	0-10	70-85	40-60	10-30	5-15	---	NP
	27-45	Extremely gravelly loamy coarse sand, very gravelly loamy coarse sand	SM, SW-SM	A-1	0-10	10-40	55-75	10-35	10-25	5-15	---	NP
	45-60	Very gravelly loamy coarse sand, extremely gravelly loamy coarse sand	SM, SW-SM	A-1	0-10	10-30	50-75	25-50	15-30	5-15	---	NP

TABLE 23.--Engineering Properties

[illegible]

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
140: Temo-----	0-10	Very gravelly loamy coarse sand	SM, SP-SM	A-1	5-15	5-10	65-85	35-55	25-40	5-20	---	NP
	10-16	Gravelly loamy coarse sand, coarse sand, gravelly coarse sand	SM, SP-SM	A-1	0	0-8	70-100	50-80	20-45	5-15	---	NP
	16-26	Bedrock			---	---	---	---	---	---	---	---
Dagget-----	0-8	Very gravelly loamy coarse sand, very gravelly coarse sand	GM	A-1-a	8-22	4-11	33-69	30-67	17-41	7-19	0-34	NP-2
	8-41	Very gravelly coarse sand, very gravelly loamy coarse sand	GP-GM	A-1-a	8-22	4-11	34-70	31-68	18-42	8-19	0-23	NP-2
	41-51	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
150: Mottskel-----	0-18	Very bouldery loamy coarse sand	SM, SP-SM	A-1	25-35	0-15	75-90	60-75	40-50	5-15	0-14	NP
	18-60	Very bouldery coarse sand, very stony coarse sand, very stony loamy coarse sand, very bouldery loamy coarse sand	SM, SP-SM	A-1	35-45	0-15	75-90	60-75	40-50	5-15	0-14	NP
160: Hopeval-----	0-5	Mucky loam	OL	A-4	0	0	85-100	75-100	65-95	60-75	30-40	NP-5
	5-12	Loam	CL	A-4	0	0	85-100	75-100	65-95	60-75	20-30	5-10
	12-15	Loam	CL	A-4	0	0	85-100	75-100	65-95	60-75	20-30	5-10
	15-26	Stratified fine sand to sandy loam	SM	A-2	0	0	85-100	75-100	55-60	25-35	15-25	NP-5
	26-33	Stratified gravelly coarse sand to fine sandy loam	SM	A-2	0	0	80-100	70-100	55-60	25-35	15-25	NP-5
	33-60	Stratified very gravelly coarse sand to loam	SM	A-1	0	0	50-70	25-50	10-35	5-20	15-25	NP-5
Hopeval-----	0-2	Very fine sandy loam	ML	A-4	0	0	85-100	75-100	65-95	60-75	20-25	NP-5
	2-12	Loam	CL	A-4	0	0	85-100	75-100	65-95	60-75	20-30	5-10
	12-15	Loam	CL	A-4	0	0	85-100	75-100	65-95	60-75	20-30	5-10
	15-26	Stratified fine sand to sandy loam	SM	A-2	0	0	85-100	75-100	55-60	25-35	15-25	NP-5
	26-33	Stratified gravelly coarse sand to fine sandy loam	SM	A-2	0	0	80-100	70-100	55-60	25-35	15-25	NP-5
	33-60	Stratified very gravelly coarse sand to loam	SM	A-1	0	0	50-70	25-50	10-35	5-20	15-25	NP-5

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
162: Corralval-----	In				Pct	Pct					Pct	
	0-3	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-5	0-5	45-60	35-50	20-40	10-30	20-30	NP-5
	3-20	Very gravelly coarse sandy loam, gravelly coarse sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2	0	0-5	45-60	35-50	20-40	10-30	20-30	NP-5
	20-26	Gravelly coarse sandy loam, very gravelly sandy loam	SM	A-1	0	0-5	65-85	50-75	35-65	15-35	20-30	NP-5
	26-45	Very gravelly coarse sandy loam, very cobbly coarse sandy loam, gravelly coarse sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2	0	30-40	60-70	50-60	35-60	20-35	20-30	NP-5
	45-60	Very cobbly loamy coarse sand, very gravelly loamy coarse sand, very gravelly coarse sand	SP-SM	A-1	0	25-45	50-70	25-50	10-30	5-15	15-25	NP-5
Hopeval-----	0-2	Very fine sandy loam	ML	A-4	0	0	85-100	75-100	65-95	60-75	20-25	NP-5
	2-12	Loam	CL	A-4	0	0	85-100	75-100	65-95	60-75	20-30	5-10
	12-15	Loam	CL	A-4	0	0	85-100	75-100	65-95	60-75	20-30	5-10
	15-26	Stratified fine sand to sandy loam	SM	A-2	0	0	85-100	75-100	55-60	25-35	15-25	NP-5
	26-33	Stratified gravelly coarse sand to fine sandy loam	SM	A-2	0	0	80-100	70-100	55-60	25-35	15-25	NP-5
	33-60	Stratified very gravelly coarse sand to loam	SM	A-1	0	0	50-70	25-50	10-35	5-20	15-25	NP-5
170: Burnlake-----	0-2	Extremely gravelly sandy loam	GW-GM	A-1	0-15	0-10	30-50	15-25	10-20	5-15	20-25	NP-5
	2-17	Extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly coarse sandy loam	GW-GM	A-1	0-10	5-20	30-45	10-35	5-25	0-20	20-30	NP-5
	17-26	Very gravelly sandy loam, extremely gravelly coarse sandy loam	GW-GM	A-1	0-10	5-20	30-45	10-35	5-25	0-20	20-30	NP-5
	26-60	Very gravelly loamy coarse sand, extremely gravelly loamy sand	SM, SP-SM	A-1	0-15	0-25	35-55	15-35	10-25	5-15	---	NP

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Roadcat-----	0-8	Extremely gravelly loamy coarse sand	SM, SP-SM	A-1	0-25	0-20	40-60	20-40	10-25	5-15	0-14	NP
	8-19	Extremely gravelly coarse sandy loam	GM, GW-GM	A-1	0-10	5-20	30-45	10-35	5-25	0-20	15-20	NP-5
	19-36	Extremely gravelly loamy coarse sand	GP-GM	A-1	0-10	5-20	30-45	10-25	5-20	0-10	15-20	NP
	36-60	Extremely gravelly loamy coarse sand	GP-GM	A-1	0-10	5-20	30-45	10-25	5-20	0-10	15-20	NP
171: Stumpatil-----	0-6	Very gravelly coarse sandy loam	SM, GM	A-1	5-15	0-10	55-65	40-50	20-30	10-20	20-25	NP-5
	6-11	Very gravelly coarse sandy loam	GM	A-1, A-2	0-15	0-18	50-65	35-50	20-35	15-30	10-25	NP-5
	11-26	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-25	50-65	35-50	20-35	15-30	10-25	NP-5
	26-33	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-25	50-65	35-50	20-35	15-30	20-25	NP-5
	33-60	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-25	50-65	35-50	20-35	15-30	20-25	NP-5
Morscour-----	0-2	Extremely gravelly sandy loam	GM	A-1	5-20	5-20	35-50	25-40	20-30	10-20	20-25	NP-5
	2-7	Very gravelly sandy loam	SM, SP-SM	A-1	0-15	0-15	40-55	30-45	20-35	5-20	10-25	NP-5
	7-14	Bedrock			---	---	---	---	---	---	---	---
	14-24	Bedrock			---	---	---	---	---	---	---	---
172: Stumpatil-----	0-6	Very gravelly coarse sandy loam	SM, GM	A-1	5-15	0-10	55-65	40-50	20-30	10-20	20-25	NP-5
	6-11	Very gravelly coarse sandy loam	GM	A-1, A-2	0-15	0-18	50-65	35-50	20-35	15-30	10-25	NP-5
	11-26	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-25	50-65	35-50	20-35	15-30	10-25	NP-5
	26-33	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-25	50-65	35-50	20-35	15-30	20-25	NP-5
	33-60	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-25	50-65	35-50	20-35	15-30	20-25	NP-5

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
173: Stumpatil-----	0-6	Very gravelly coarse sandy loam	SM, GM	A-1	5-15	0-10	55-65	40-50	20-30	10-20	20-25	NP-5
	6-11	Very gravelly coarse sandy loam	GM	A-1, A-2	0-15	0-18	50-65	35-50	20-35	15-30	10-25	NP-5
	11-26	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-25	50-65	35-50	20-35	15-30	10-25	NP-5
	26-33	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-25	50-65	35-50	20-35	15-30	20-25	NP-5
	33-60	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-25	50-65	35-50	20-35	15-30	20-25	NP-5
174: Stumpatil-----	0-6	Very gravelly coarse sandy loam	SM, GM	A-1	5-15	0-10	55-65	40-50	20-30	10-20	20-25	NP-5
	6-11	Very gravelly coarse sandy loam	GM	A-1, A-2	0-15	0-18	50-65	35-50	20-35	15-30	10-25	NP-5
	11-26	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-25	50-65	35-50	20-35	15-30	10-25	NP-5
	26-33	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-25	50-65	35-50	20-35	15-30	20-25	NP-5
	33-60	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-25	50-65	35-50	20-35	15-30	20-25	NP-5
Sonorapass-----	0-8	Very gravelly coarse sandy loam	SM, SP-SM	A-1	0-10	0-15	50-65	35-50	20-35	5-20	10-25	NP-5
	8-17	Extremely cobbly coarse sandy loam, extremely gravelly coarse sandy loam	GP-GM	A-1	0-18	20-60	25-65	10-45	10-25	5-15	20-30	NP-5
	17-21	Extremely cobbly coarse sandy loam, extremely gravelly coarse sandy loam	GP-GM	A-1	0-15	20-60	25-65	15-45	10-25	5-15	20-30	NP-5
	21-31	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Snowtell-----	0-3	Very gravelly coarse sandy loam	SM, SP-SM	A-1	0-15	0-20	55-75	35-50	20-35	5-20	10-25	NP-5
	3-10	Very gravelly coarse sandy loam	SM, SP-SM	A-1	0-15	0-20	55-75	35-50	20-35	5-20	10-25	NP-5
	10-20	Bedrock			---	---	---	---	---	---	---	---
180: Shalgran-----	0-3	Very bouldery coarse sand	SM, SP-SM	A-1	25-50	5-10	65-85	30-55	20-35	5-20	---	NP
	3-14	Very bouldery coarse sand, very bouldery loamy coarse sand	SM, SP-SM	A-1	30-55	5-15	80-90	40-55	15-30	5-15	0-14	NP
	14-24	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
190: Hopeval-----	0-2	Very fine sandy loam	ML	A-4	0	0	85-100	75-100	65-95	60-75	20-25	NP-5
	2-12	Loam	CL	A-4	0	0	85-100	75-100	65-95	60-75	20-30	5-10
	12-15	Loam	CL	A-4	0	0	85-100	75-100	65-95	60-75	20-30	5-10
	15-26	Stratified fine sand to sandy loam	SM	A-2	0	0	85-100	75-100	55-60	25-35	15-25	NP-5
	26-33	Stratified gravelly coarse sand to fine sandy loam	SM	A-2	0	0	80-100	70-100	55-60	25-35	15-25	NP-5
	33-60	Stratified very gravelly coarse sand to loam	SM	A-1	0	0	50-70	25-50	10-35	5-20	15-25	NP-5
Hopeval-----	0-5	Mucky loam	OL	A-4	0	0	85-100	75-100	65-95	60-75	30-40	NP-5
	5-12	Loam	CL	A-4	0	0	85-100	75-100	65-95	60-75	20-30	5-10
	12-15	Loam	CL	A-4	0	0	85-100	75-100	65-95	60-75	20-30	5-10
	15-26	Stratified fine sand to sandy loam	SM	A-2	0	0	85-100	75-100	55-60	25-35	15-25	NP-5
	26-33	Stratified gravelly coarse sand to fine sandy loam	SM	A-2	0	0	80-100	70-100	55-60	25-35	15-25	NP-5
	33-60	Stratified very gravelly coarse sand to loam	SM	A-1	0	0	50-70	25-50	10-35	5-20	15-25	NP-5
200: Cavebear-----	0-4	Gravelly loam	SM	A-2, A-4	0	0-5	70-80	60-70	40-50	30-40	20-30	NP-5
	4-20	Gravelly sandy loam, very gravelly sandy loam	SM	A-2	0	0-5	50-80	40-70	30-50	20-35	20-30	NP-5
	20-60	Extremely gravelly coarse sand, extremely gravelly loamy coarse sand	GP-GM	A-1	0	0	25-45	10-25	5-20	0-10	15-20	NP

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Hopeval-----	0-2	Very fine sandy loam	ML	A-4	0	0	85-100	75-100	65-95	60-75	20-25	NP-5
	2-12	Loam	CL	A-4	0	0	85-100	75-100	65-95	60-75	20-30	5-10
	12-15	Loam	CL	A-4	0	0	85-100	75-100	65-95	60-75	20-30	5-10
	15-26	Stratified fine sand to sandy loam	SM	A-2	0	0	85-100	75-100	55-60	25-35	15-25	NP-5
	26-33	Stratified gravelly coarse sand to fine sandy loam	SM	A-2	0	0	80-100	70-100	55-60	25-35	15-25	NP-5
	33-60	Stratified very gravelly coarse sand to loam	SM	A-1	0	0	50-70	25-50	10-35	5-20	15-25	NP-5
Hopeval-----	0-5	Mucky loam	OL	A-4	0	0	85-100	75-100	65-95	60-75	30-40	NP-5
	5-12	Loam	CL	A-4	0	0	85-100	75-100	65-95	60-75	20-30	5-10
	12-15	Loam	CL	A-4	0	0	85-100	75-100	65-95	60-75	20-30	5-10
	15-26	Stratified fine sand to sandy loam	SM	A-2	0	0	85-100	75-100	55-60	25-35	15-25	NP-5
	26-33	Stratified gravelly coarse sand to fine sandy loam	SM	A-2	0	0	80-100	70-100	55-60	25-35	15-25	NP-5
	33-60	Stratified very gravelly coarse sand to loam	SM	A-1	0	0	50-70	25-50	10-35	5-20	15-25	NP-5
210: Waterpeak-----	0-5	Very bouldery coarse sand	SM, SP-SM	A-1	20-35	10-20	70-85	55-70	30-50	5-15	0-14	NP
	5-18	Very stony coarse sand	SP-SM, SM	A-1	25-40	5-15	65-85	50-70	30-50	5-15	0-14	NP
	18-27	Very stony loamy coarse sand	SP-SM, SM	A-1	25-40	8-18	70-85	55-70	30-50	5-15	0-14	NP
	27-60	Very stony sandy loam, very stony coarse sandy loam	SM	A-1, A-2	25-40	8-25	70-85	55-70	35-50	15-30	20-25	NP-5
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	
211: Waterpeak-----	0-5	Very bouldery coarse sand	SM, SP-SM	A-1	20-35	10-20	70-85	55-70	30-50	5-15	0-14	NP
	5-18	Very stony coarse sand	SP-SM, SM	A-1	25-40	5-15	65-85	50-70	30-50	5-15	0-14	NP
	18-27	Very stony loamy coarse sand	SP-SM, SM	A-1	25-40	8-18	70-85	55-70	30-50	5-15	0-14	NP
	27-60	Very stony sandy loam, very stony coarse sandy loam	SM	A-1, A-2	25-40	8-25	70-85	55-70	35-50	15-30	20-25	NP-5

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Buggin-----	0-2	Extremely bouldery loamy coarse sand	SP-SM	A-1	25-50	5-10	50-70	15-35	5-15	0-10	---	NP
	2-7	Very gravelly loamy coarse sand, extremely gravelly loamy coarse sand	SM, SP-SM	A-1	0-25	0-15	70-90	20-50	10-30	5-15	---	NP
	7-10	Very gravelly loamy coarse sand, extremely gravelly coarse sandy loam	SM, SP-SM	A-1	0-15	0-25	60-85	20-45	10-30	5-15	---	NP
	10-16	Bedrock			---	---	---	---	---	---	---	---
	16-26	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
212: Waterpeak-----	0-5	Very bouldery coarse sand	SM, SP-SM	A-1	20-35	10-20	70-85	55-70	30-50	5-15	0-14	NP
	5-18	Very stony coarse sand	SP-SM, SM	A-1	25-40	5-15	65-85	50-70	30-50	5-15	0-14	NP
	18-27	Very stony loamy coarse sand	SP-SM, SM	A-1	25-40	8-18	70-85	55-70	30-50	5-15	0-14	NP
	27-60	Very stony sandy loam, very stony coarse sandy loam	SM	A-1, A-2	25-40	8-25	70-85	55-70	35-50	15-30	20-25	NP-5
Sofgran-----	0-3	Gravelly loamy coarse sand	SM, SP-SM	A-1	5-25	0-10	80-90	60-70	40-50	5-15	0-14	NP
	3-6	Gravelly loamy coarse sand	SP-SM	A-1	0-10	0-10	70-80	50-60	30-40	5-10	0-14	NP
	6-9	Very gravelly loamy coarse sand, very gravelly coarse sand, gravelly loamy coarse sand	SM, SP-SM	A-1	0-10	0-10	70-85	40-60	10-30	5-15	---	NP
	9-19	Gravelly loamy coarse sand, very gravelly coarse sand, very gravelly loamy coarse sand	SM, SP-SM	A-1	0-10	0-10	70-85	25-45	10-20	5-15	---	NP
	19-27	Very gravelly coarse sand, very gravelly loamy coarse sand, gravelly loamy coarse sand	SM, SP-SM	A-1	0-10	0-10	70-85	40-60	10-30	5-15	---	NP
	27-45	Extremely gravelly loamy coarse sand, very gravelly loamy coarse sand	SM, SW-SM	A-1	0-10	10-40	55-75	10-35	10-25	5-15	---	NP
	45-60	Very gravelly loamy coarse sand, extremely gravelly loamy coarse sand	SM, SW-SM	A-1	0-10	10-30	50-75	25-50	15-30	5-15	---	NP

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches						
							4	10	40	200		
	In				Pct	Pct					Pct	
Temo-----	0-10	Very gravelly loamy coarse sand	SM, SP-SM	A-1	5-15	5-10	65-85	35-55	25-40	5-20	---	NP
	10-16	Gravelly loamy coarse sand, coarse sand, gravelly coarse sand	SM, SP-SM	A-1	0	0-8	70-100	50-80	20-45	5-15	---	NP
	16-26	Bedrock			---	---	---	---	---	---	---	---
220: Hardtil-----	0-3	Gravelly loamy coarse sand	SM, SP-SM	A-1	0-20	0-15	80-90	60-70	30-50	5-15	0-14	NP
	3-7	Very gravelly coarse sandy loam	SM, SP-SM	A-1	0-15	0-15	55-70	35-50	20-35	5-20	10-25	NP-5
	7-18	Very gravelly coarse sandy loam	GM	A-1	0-15	0-15	45-55	25-35	25-35	10-20	10-25	NP-5
	18-28	Bedrock			---	---	---	---	---	---	---	---
Alpineco-----	0-3	Very stony coarse sandy loam	SM	A-1	20-40	10-25	65-75	50-60	35-45	20-30	20-25	NP-5
	3-12	Very stony coarse sandy loam	SM	A-1	20-40	10-25	60-75	45-60	30-45	15-25	20-25	NP-5
	12-22	Very stony coarse sandy loam, very stony sandy loam	SM	A-1	25-40	10-25	60-75	45-60	30-40	10-20	20-25	NP-5
	22-27	Very stony coarse sandy loam, very stony sandy loam	SM	A-1	25-40	10-25	60-75	45-60	30-40	10-20	20-25	NP-5
	27-49	Extremely stony coarse sandy loam, very stony sandy loam	SM, SP-SM	A-1	20-40	10-25	45-60	30-45	20-30	5-15	20-25	NP-5
	49-59	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
221: Hardtil-----	0-3	Gravelly loamy coarse sand	SM, SP-SM	A-1	0-20	0-15	80-90	60-70	30-50	5-15	0-14	NP
	3-7	Very gravelly coarse sandy loam	SM, SP-SM	A-1	0-15	0-15	55-70	35-50	20-35	5-20	10-25	NP-5
	7-18	Very gravelly coarse sandy loam	GM	A-1	0-15	0-15	45-55	25-35	25-35	10-20	10-25	NP-5
	18-28	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

[illegible]

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
230: Hawkinspeak-----	0-3	Very gravelly sandy loam	GM, SM	A-2	5-25	5-20	55-70	50-65	40-55	25-35	20-30	NP-5
	3-9	Very gravelly sandy loam	GM	A-1, A-2	5-15	0-10	30-55	25-50	20-40	10-30	20-30	NP-5
	9-33	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	33-43	Bedrock			---	---	---	---	---	---	---	---
Thiefdrige-----	0-1	Very stony slightly decomposed plant material	GP	A-1	20-40	10-30	---	---	---	---	---	---
	1-4	Very cobbly fine sandy loam	GM	A-2, A-4	0-5	25-50	55-80	50-75	35-60	25-50	15-25	NP-5
	4-8	Extremely cobbly sandy loam	GP-GM, GM	A-1	0-5	40-60	40-60	30-50	20-40	5-35	15-25	NP-5
	8-12	Extremely cobbly sandy loam	GM, GP-GM	A-1	0-5	40-60	40-60	30-50	20-40	5-35	15-25	NP-5
	12-17	Very cobbly sandy loam, very gravelly sandy clay loam	GC	A-2	0	20-45	45-70	40-65	30-55	15-35	25-35	10-20
	17-27	Bedrock			---	---	---	---	---	---	---	---
Angelwhine-----	0-15	Extremely gravelly coarse sandy loam	GP-GM	A-1	0-10	5-20	35-45	15-25	10-20	5-15	20-30	NP-5
	15-23	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-10	35-55	25-45	20-40	10-30	20-30	NP-5
	23-43	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam, very gravelly coarse sandy loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	43-60	Extremely gravelly sandy loam, very gravelly sandy loam, very gravelly coarse sandy loam, extremely gravelly coarse sandy loam	GC	A-2	0-10	5-20	30-45	20-35	15-30	10-25	30-35	10-15

TABLE 23.--Engineering Properties

[illegible]

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches						
					4	10	40	200				
	In				Pct	Pct					Pct	
233: Angelwhine-----	0-15	Extremely gravelly coarse sandy loam	GP-GM	A-1	0-10	5-20	35-45	15-25	10-20	5-15	20-30	NP-5
	15-23	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-10	35-55	25-45	20-40	10-30	20-30	NP-5
	23-43	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam, very gravelly coarse sandy loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	43-60	Extremely gravelly sandy loam, very gravelly sandy loam, very gravelly coarse sandy loam, extremely gravelly coarse sandy loam	GC	A-2	0-10	5-20	30-45	20-35	15-30	10-25	30-35	10-15
Hawkinspeak-----	0-3	Very gravelly sandy loam	GM, SM	A-2	5-25	5-20	55-70	50-65	40-55	25-35	20-30	NP-5
	3-9	Very gravelly sandy loam	GM	A-1, A-2	5-15	0-10	30-55	25-50	20-40	10-30	20-30	NP-5
	9-33	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	33-43	Bedrock			---	---	---	---	---	---	---	---
Hawkridge-----	0-1	Very stony sandy loam	GM, SM	A-2	20-35	10-20	55-70	50-65	40-55	25-35	20-30	NP-5
	1-7	Very gravelly sandy loam	GM	A-1, A-2	0-10	5-20	30-55	25-50	20-40	10-30	20-30	NP-5
	7-14	Very gravelly loam, extremely gravelly coarse sandy loam, very gravelly sandy clay loam	GC, GP-GC	A-2	0-10	5-20	25-45	20-40	10-30	5-20	30-35	10-15
	14-24	Bedrock			---	---	---	---	---	---	---	---
234: Hawkinspeak-----	0-3	Very gravelly sandy loam	GM, SM	A-2	5-25	5-20	55-70	50-65	40-55	25-35	20-30	NP-5
	3-9	Very gravelly sandy loam	GM	A-1, A-2	5-15	0-10	30-55	25-50	20-40	10-30	20-30	NP-5
	9-33	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	33-43	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In										Pct	
Hawkinspeak-----	0-3	Very gravelly sandy loam	GM, SM	A-2	5-25	5-20	55-70	50-65	40-55	25-35	20-30	NP-5
	3-9	Very gravelly sandy loam	GM	A-1, A-2	5-15	0-10	30-55	25-50	20-40	10-30	20-30	NP-5
	9-33	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	33-43	Bedrock			---	---	---	---	---	---	---	---
Thieftridge-----	0-1	Very stony slightly decomposed plant material	GP	A-1	20-40	10-30	---	---	---	---	---	---
	1-4	Very cobbly fine sandy loam	GM	A-2, A-4	0-5	25-50	55-80	50-75	35-60	25-50	15-25	NP-5
	4-8	Extremely cobbly sandy loam	GP-GM, GM	A-1	0-5	40-60	40-60	30-50	20-40	5-35	15-25	NP-5
	8-12	Extremely cobbly sandy loam	GM, GP-GM	A-1	0-5	40-60	40-60	30-50	20-40	5-35	15-25	NP-5
	12-17	Very cobbly sandy loam, very gravelly sandy clay loam	GC	A-2	0	20-45	45-70	40-65	30-55	15-35	25-35	10-20
	17-27	Bedrock			---	---	---	---	---	---	---	---
235: Hawkinspeak-----	0-3	Very gravelly sandy loam	GM, SM	A-2	5-25	5-20	55-70	50-65	40-55	25-35	20-30	NP-5
	3-9	Very gravelly sandy loam	GM	A-1, A-2	5-15	0-10	30-55	25-50	20-40	10-30	20-30	NP-5
	9-33	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	33-43	Bedrock			---	---	---	---	---	---	---	---
Hawkinspeak-----	0-3	Very gravelly sandy loam	GM, SM	A-2	5-25	5-20	55-70	50-65	40-55	25-35	20-30	NP-5
	3-9	Very gravelly sandy loam	GM	A-1, A-2	5-15	0-10	30-55	25-50	20-40	10-30	20-30	NP-5
	9-33	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	33-43	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

[illegible]

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
250: Florand-----	In				Pct	Pct					Pct	
	0-1	Very gravelly peaty sandy loam	GM	A-2, A-1	0-15	0-10	45-55	35-50	20-40	10-30	20-30	NP-5
	1-4	Very gravelly sandy loam	GM	A-1, A-2	0-15	0-10	45-55	35-50	20-40	10-30	20-30	NP-5
	4-12	Gravelly sandy loam	SM	A-1	0-15	0-10	65-85	50-75	35-65	15-35	20-30	NP-5
	12-18	Gravelly sandy loam	SM	A-1	0-15	0-10	65-85	50-75	35-65	15-35	20-30	NP-5
	18-28	Very gravelly sandy loam, very gravelly coarse sandy loam	GM	A-1, A-2	0-15	0-10	45-55	35-50	20-40	10-30	20-30	NP-5
	28-38	Very gravelly sandy loam, very gravelly coarse sandy loam	GM	A-1, A-2	0-15	10-25	45-55	35-50	20-40	10-30	20-30	NP-5
	38-47	Gravelly sandy loam	SM	A-1	0-15	0-20	65-85	50-75	35-65	15-35	20-30	NP-5
	47-57	Bedrock			---	---	---	---	---	---	---	---
Lostridge-----	0-3	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	45-60	35-50	20-40	10-30	20-30	NP-5
	3-11	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	45-60	35-50	20-40	10-30	20-30	NP-5
	11-23	Very gravelly coarse sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2	0-15	0-10	45-60	25-50	20-40	10-30	20-30	NP-5
	23-29	Very gravelly coarse sandy loam, very gravelly sandy loam	SM, GM	A-1, A-2	0-15	0-10	45-60	25-50	20-40	10-30	20-30	NP-5
	29-39	Bedrock			---	---	---	---	---	---	---	---
Fishsnooze-----	0-1	Very gravelly peaty coarse sandy loam	GM	A-2, A-1	0-15	0-10	40-55	35-50	20-40	10-30	20-30	NP-5
	1-9	Very gravelly coarse sandy loam, extremely gravelly coarse sandy loam, extremely gravelly sandy loam	GP-GM	A-1	0-15	0-15	25-45	15-35	10-25	5-15	20-30	NP-5
	9-13	Extremely gravelly coarse sandy loam, very gravelly coarse sandy loam, extremely gravelly sandy loam	GP-GM	A-1	0-15	10-30	35-55	15-35	10-25	5-15	20-30	NP-5
	13-35	Extremely cobble coarse sandy loam, extremely gravelly sandy loam	GP-GM	A-1	0-15	20-60	25-65	10-45	10-25	5-15	20-30	NP-5
	35-45	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
260: Hawkridge-----	0-1	Extremely gravelly coarse sandy loam	GP-GM	A-1	0-10	5-20	40-55	15-25	10-20	5-15	20-30	NP-5
	1-7	Very gravelly sandy loam	GM	A-1, A-2	0-10	5-20	30-55	25-50	20-40	10-30	20-30	NP-5
	7-14	Very gravelly loam, extremely gravelly coarse sandy loam, very gravelly sandy clay loam	GC, GP-GC	A-2	0-10	5-20	25-45	20-40	10-30	5-20	30-35	10-15
	14-24	Bedrock			---	---	---	---	---	---	---	---
	Hawkinspeak-----	0-3	Very gravelly sandy loam	GM, SM	A-2	5-25	5-20	55-70	50-65	40-55	25-35	20-30
	3-9	Very gravelly sandy loam	GM	A-1, A-2	5-15	0-10	30-55	25-50	20-40	10-30	20-30	NP-5
	9-33	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	33-43	Bedrock			---	---	---	---	---	---	---	---
Hawkinspeak-----	0-3	Very gravelly sandy loam	GM, SM	A-2	5-25	5-20	55-70	50-65	40-55	25-35	20-30	NP-5
	3-9	Very gravelly sandy loam	GM	A-1, A-2	5-15	0-10	30-55	25-50	20-40	10-30	20-30	NP-5
	9-33	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	33-43	Bedrock			---	---	---	---	---	---	---	---
261: Hawkridge-----	0-1	Very stony sandy loam	GM, SM	A-2	20-35	10-20	55-70	50-65	40-55	25-35	20-30	NP-5
	1-7	Very gravelly sandy loam	GM	A-1, A-2	0-10	5-20	30-55	25-50	20-40	10-30	20-30	NP-5
	7-14	Very gravelly loam, extremely gravelly coarse sandy loam, very gravelly sandy clay loam	GC, GP-GC	A-2	0-10	5-20	25-45	20-40	10-30	5-20	30-35	10-15
	14-24	Bedrock			---	---	---	---	---	---	---	---
	Lithnip-----	0-1	Extremely gravelly sandy loam	GP-GM	A-1	0-8	5-15	40-55	15-25	10-20	5-15	20-30
	1-5	Very gravelly sandy loam, extremely gravelly sandy loam	GW-GM	A-1	0-5	5-15	25-45	15-35	5-25	0-20	20-30	NP-5
	5-15	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct 5-25	Pct 5-20	55-70	50-65	40-55	25-35		
Hawkinspeak-----	In											
	0-3	Very gravelly sandy loam	GM, SM	A-2	5-25	5-20	55-70	50-65	40-55	25-35	20-30	NP-5
	3-9	Very gravelly sandy loam	GM	A-1, A-2	5-15	0-10	30-55	25-50	20-40	10-30	20-30	NP-5
	9-33	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
262: Domehill-----	33-43	Bedrock			---	---	---	---	---	---	---	---
	0-2	Very gravelly ashy sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	2-8	Very gravelly ashy loam, very gravelly ashy sandy clay loam, very gravelly ashy sandy loam	GC	A-2, A-6	0-8	0-10	35-55	30-50	25-45	20-40	30-40	10-15
	8-13	Very gravelly ashy loam, very gravelly ashy sandy clay loam, very gravelly ashy clay loam	GM	A-2, A-6	0-8	0-10	35-55	30-50	25-45	20-40	30-45	10-15
Kiote-----	13-23	Bedrock			---	---	---	---	---	---	---	---
	0-10	Gravelly ashy loam	GC-GM, GM, SC-SM, SM	A-2, A-4	0	0-5	60-85	50-75	35-50	25-40	20-30	NP-10
	10-17	Very gravelly loam	GC-GM, GC	A-2	0	0-5	50-65	25-50	20-35	15-30	20-30	5-10
	17-30	Very gravelly loam	GC	A-2	0	5-20	40-55	25-45	20-35	15-30	25-35	10-15
270: Duco-----	30-60	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly coarse sandy loam	GW-GC, GW-GM	A-1, A-2	0	5-15	20-35	15-25	10-15	5-10	20-30	NP-10
	0-3	Very stony sandy loam	GC-GM, SC	A-2	5-30	5-25	55-80	50-75	35-60	15-35	20-30	5-10
	3-5	Gravelly loam	SC	A-4	0-1	5-15	75-90	70-80	50-75	40-60	20-30	5-10
	5-18	Very gravelly clay loam, extremely stony clay loam, very cobbly sandy clay loam	GC	A-2	5-30	10-55	35-60	30-55	20-35	15-30	35-40	15-20
Smallcone-----	18-28	Bedrock			---	---	---	---	---	---	---	---
	0-3	Very gravelly coarse sandy loam	GM, GW-GM, SM, SW-SM	A-1	0	0-10	40-75	25-50	15-35	5-25	20-30	NP-5
	3-6	Extremely gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GW-GM	A-1	0	0-10	30-50	15-25	10-20	5-15	20-30	NP-5
	6-16	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In				Pct	Pct					Pct	
Cagle-----	0-4	Very stony clay loam	CL	A-6, A-7	20-40	5-25	70-90	65-85	60-80	55-65	35-45	15-25
	4-12	Gravelly clay, gravelly clay loam, gravelly silty clay	CH, CL, GC	A-7	0	0-5	60-85	50-75	45-75	40-65	45-55	20-30
	12-28	Gravelly clay, gravelly clay loam, gravelly silty clay	CH, CL, GC	A-7	0	0-5	60-85	50-75	45-75	40-65	45-55	20-30
	28-38	Bedrock			---	---	---	---	---	---	---	---
271: Duco-----	0-3	Very stony sandy loam	SC, SC-SM	A-2	5-30	5-25	55-80	50-75	35-60	15-35	20-30	5-10
	3-5	Gravelly loam	CL-ML, SC	A-4	0-1	5-15	75-90	70-80	50-75	40-60	20-30	5-10
	5-18	Very gravelly clay loam, extremely stony clay loam, very cobbly sandy clay loam	GC	A-2	5-30	10-55	35-60	30-55	20-35	15-30	35-40	15-20
	18-28	Bedrock			---	---	---	---	---	---	---	---
Vetagrande-----	0-3	Very gravelly sandy loam	GW-GM	A-1	0-8	0-8	45-65	25-50	20-30	10-15	20-25	NP-5
	3-9	Very gravelly sandy loam	GW-GM	A-1	0-8	0-8	45-65	25-50	20-30	10-15	20-25	NP-5
	9-25	Very gravelly sandy clay loam, very gravelly sandy loam	SC-SM, GC	A-2	0-8	0-8	45-65	25-50	10-30	10-20	25-35	5-10
	25-60	Very gravelly sandy clay loam, very gravelly sandy loam	SC-SM, GC	A-2	0-8	0-10	45-65	25-50	10-30	10-20	25-35	5-10
Pinenut-----	0-1	Very stony sandy loam	SP-SM, GW-GM	A-1	15-35	5-15	45-65	35-55	15-30	5-10	15-25	NP-5
	1-6	Very gravelly sandy loam	GW-GM, SP-SM	A-1	0	0-15	50-75	25-50	20-40	5-15	15-25	NP-5
	6-19	Very gravelly sandy loam, very gravelly sandy clay loam	SC-SM, GC	A-2	0-10	0-10	45-65	25-50	15-30	10-20	25-35	5-10
	19-29	Bedrock			---	---	---	---	---	---	---	---
280: Longcreek-----	0-3	Very stony loam	GC-GM, GC, SC-SM, SM	A-4	30-40	0-10	65-75	55-65	45-55	35-45	25-35	5-10
	3-6	Very cobbly clay loam	CL	A-6	0	30-40	70-80	60-75	55-70	50-60	30-40	15-20
	6-14	Very cobbly clay, very cobbly silty clay	CH, CL	A-7	0	30-50	70-80	60-75	55-70	50-65	45-60	25-35
	14-24	Bedrock			---	---	---	---	---	---	---	---
Devada-----	0-4	Very stony loam	CL, CL-ML, SC, SC-SM	A-4, A-6	15-35	10-40	80-90	70-80	50-75	40-60	25-35	5-15
	4-5	Clay loam	CL	A-7	0	0-5	90-100	80-90	75-85	60-70	40-45	15-20
	5-13	Gravelly clay, clay	CH, GC	A-7	0	0-10	70-100	60-90	50-80	35-70	50-65	25-35
	13-23	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

[illegible]

TABLE 23.--Engineering Properties

[illegible]

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Chenhigh-----	0-3	Very gravelly sandy loam	GM, SM	A-2	5-25	10-20	50-70	40-60	30-50	25-35	20-30	NP-5
	3-6	Very gravelly clay loam, very gravelly clay	GC	A-2	0-10	0-10	40-60	35-50	30-45	25-40	35-50	15-25
	6-10	Extremely gravelly clay, very gravelly clay, very gravelly clay loam	GC	A-2	0-5	0-10	25-45	15-35	10-25	5-20	35-50	15-25
	10-18	Extremely gravelly clay, very gravelly clay loam, very gravelly clay	GC	A-2	0-10	0-10	20-40	10-30	10-25	5-20	35-50	15-25
	18-28	Bedrock			---	---	---	---	---	---	---	---
Celeridge-----	0-3	Extremely bouldery sandy loam	GM, GP-GM	A-1	40-60	0-20	35-55	20-45	15-35	5-25	20-30	NP-5
	3-8	Extremely gravelly sandy loam	GM, GP-GM	A-1	0-20	10-20	20-35	15-25	10-20	5-15	20-30	NP-5
	8-19	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-35	15-25	5-15	0-10	30-35	10-15
	19-29	Bedrock			---	---	---	---	---	---	---	---
Dogbed-----	0-14	Very gravelly sandy loam	GM	A-1	0-10	0-10	45-60	35-50	25-40	15-30	20-30	NP-5
	14-50	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2	0-10	0-10	35-55	25-50	20-40	15-35	30-35	10-15
	50-60	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2	0-10	0-10	35-55	25-50	20-40	15-35	30-35	10-15
360: Monibasin-----	0-15	Gravelly sandy loam	SM	A-1	5-15	0-10	65-85	50-75	35-65	15-35	20-30	NP-5
	15-34	Extremely stony sandy loam, extremely stony sandy clay loam	GC	A-2	40-65	10-20	40-55	30-45	15-35	5-25	25-35	5-10
	34-60	Very stony sandy loam, extremely stony sandy clay loam	GC	A-2, A-1	25-60	10-20	55-70	45-60	30-45	15-30	25-35	5-10

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches						
					4	10	40	200				
	In				Pct	Pct					Pct	
Vermdig-----	0-2	Loam	CL	A-4	0-5	0-5	90-100	80-100	75-95	60-75	20-30	5-10
	2-13	Gravelly sandy loam, gravelly loam, gravelly sandy clay loam	SC, SC-SM	A-4	0-5	0-10	70-85	55-75	50-65	40-50	25-35	5-10
	13-32	Gravelly sandy loam, gravelly loam, gravelly sandy clay loam	SC, SC-SM	A-4	0-5	0-10	70-85	55-75	50-65	40-50	25-35	5-10
	32-60	Gravelly clay loam, gravelly loam, gravelly sandy clay loam	SC	A-6	0-5	0-10	65-85	55-75	50-65	40-50	30-40	10-15
370: Celeridge-----	0-3	Extremely bouldery sandy loam	GM, GP-GM	A-1	40-60	0-20	35-55	20-45	15-35	5-25	20-30	NP-5
	3-8	Extremely gravelly sandy loam	GM, GP-GM	A-1	0-20	10-20	20-35	15-25	10-20	5-15	20-30	NP-5
	8-19	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-35	15-25	5-15	0-10	30-35	10-15
	19-29	Bedrock			---	---	---	---	---	---	---	---
Gerdog-----	0-3	Very gravelly sandy loam	GM, SM	A-1	5-15	5-15	55-70	35-50	25-40	20-30	20-30	NP-5
	3-11	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	11-21	Bedrock			---	---	---	---	---	---	---	---
Loope-----	0-1	Very gravelly sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	1-14	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-45	10-30	5-25	0-20	30-35	10-15
	14-24	Bedrock			---	---	---	---	---	---	---	---
Pinew-----	0-3	Very gravelly sandy loam	GM, SM	A-2	0-8	0-8	55-70	40-55	30-45	25-35	20-30	NP-5
	3-8	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	8-15	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam	GC	A-2	0-10	5-20	35-60	25-50	20-45	15-35	30-40	10-15
	15-25	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
380: Joecut-----	0-1	Very cobbly slightly decomposed plant material			5-25	5-40	---	---	---	---	---	---
	1-2	Very gravelly sandy loam	GM, SM	A-2	0-10	10-20	55-70	30-50	30-40	25-35	20-30	NP-5
	2-14	Very gravelly loam	GM	A-2, A-1	0-15	0-10	40-55	35-50	30-40	20-30	20-30	NP-5
	14-40	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam, very cobbly clay loam	SC, GC	A-2	0-5	5-40	40-70	30-60	25-45	15-35	30-40	10-15
	40-60	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam, very cobbly clay loam	SC, GC	A-2	5-10	7-40	40-70	30-60	25-45	15-35	30-40	10-15
Celeridge-----	0-3	Extremely bouldery sandy loam	GM, GP-GM	A-1	40-60	0-20	35-55	20-45	15-35	5-25	20-30	NP-5
	3-8	Extremely gravelly sandy loam	GM, GP-GM	A-1	0-20	10-20	20-35	15-25	10-20	5-15	20-30	NP-5
	8-19	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-35	15-25	5-15	0-10	30-35	10-15
	19-29	Bedrock			---	---	---	---	---	---	---	---
Joecut-----	0-1	Slightly decomposed plant material			0-10	0	---	---	---	---	---	---
	1-2	Very gravelly peaty loam	GM	A-1, A-2	0-15	0-10	40-55	35-50	30-40	20-30	20-30	NP-5
	2-14	Very gravelly loam	GM	A-2, A-1	0-15	0-10	40-55	35-50	30-40	20-30	20-30	NP-5
	14-40	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam, very cobbly clay loam	SC, GC	A-2	0-5	5-40	40-70	30-60	25-45	15-35	30-40	10-15
	40-60	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam, very cobbly clay loam	SC, GC	A-2	5-10	7-40	40-70	30-60	25-45	15-35	30-40	10-15

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Gerdog-----	0-3	Very gravelly sandy loam	GM, SM	A-1	5-15	5-15	55-70	35-50	25-40	20-30	20-30	NP-5
	3-11	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	11-21	Bedrock			---	---	---	---	---	---	---	---
381: Heenlake-----	0-6	Very stony sandy loam	GM, SM	A-2	10-35	20-35	55-70	50-65	40-55	25-35	20-30	NP-5
	6-18	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam	GC	A-2	10-30	10-30	35-60	25-50	20-45	15-35	30-40	10-15
	18-22	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam	GC	A-2	0-10	10-20	35-60	25-50	20-45	15-35	30-40	10-15
	22-32	Bedrock			---	---	---	---	---	---	---	---
Loope-----	0-1	Very gravelly sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	1-14	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-45	10-30	5-25	0-20	30-35	10-15
	14-24	Bedrock			---	---	---	---	---	---	---	---
Joecut-----	0-2	Very gravelly sandy loam	GM, SM	A-2	0-10	10-20	55-70	30-50	30-40	25-35	20-30	NP-5
	2-14	Very gravelly loam	GM	A-2, A-1	0-15	0-10	40-55	35-50	30-40	20-30	20-30	NP-5
	14-40	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam, very cobbly clay loam	SC, GC	A-2	0-5	5-40	40-70	30-60	25-45	15-35	30-40	10-15
	40-60	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam, very cobbly clay loam	SC, GC	A-2	5-10	7-40	40-70	30-60	25-45	15-35	30-40	10-15

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Joecut-----	0-1	Slightly decomposed plant material			0-10	0	---	---	---	---	---	---
	1-2	Very gravelly peaty loam	GM	A-1, A-2	0-15	0-10	40-55	35-50	30-40	20-30	20-30	NP-5
	2-14	Very gravelly loam	GM	A-2, A-1	0-15	0-10	40-55	35-50	30-40	20-30	20-30	NP-5
	14-40	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam, very cobbly clay loam	SC, GC	A-2	0-5	5-40	40-70	30-60	25-45	15-35	30-40	10-15
	40-60	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam, very cobbly clay loam	SC, GC	A-2	5-10	7-40	40-70	30-60	25-45	15-35	30-40	10-15
382: Joecut-----	0-2	Very gravelly sandy loam	GM, SM	A-2	0-10	10-20	55-70	30-50	30-40	25-35	20-30	NP-5
	2-14	Very gravelly loam	GM	A-2, A-1	0-15	0-10	40-55	35-50	30-40	20-30	20-30	NP-5
	14-40	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam, very cobbly clay loam	SC, GC	A-2	0-5	5-40	40-70	30-60	25-45	15-35	30-40	10-15
	40-60	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam, very cobbly clay loam	SC, GC	A-2	5-10	7-40	40-70	30-60	25-45	15-35	30-40	10-15
Joecut-----	0-1	Slightly decomposed plant material			0-10	0	---	---	---	---	---	---
	1-2	Very gravelly peaty loam	GM	A-1, A-2	0-15	0-10	40-55	35-50	30-40	20-30	20-30	NP-5
	2-14	Very gravelly loam	GM	A-2, A-1	0-15	0-10	40-55	35-50	30-40	20-30	20-30	NP-5
	14-40	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam, very cobbly clay loam	SC, GC	A-2	0-5	5-40	40-70	30-60	25-45	15-35	30-40	10-15
	40-60	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam, very cobbly clay loam	SC, GC	A-2	5-10	7-40	40-70	30-60	25-45	15-35	30-40	10-15

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
390: Heenlake-----	0-6	Very stony loam	GC, GC-GM	A-2	20-30	10-15	60-65	45-55	35-45	25-35	20-35	5-15
	6-18	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam	GC	A-2	10-30	10-30	35-60	25-50	20-45	15-35	30-40	10-15
	18-22	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam	GC	A-2	0-10	10-20	35-60	25-50	20-45	15-35	30-40	10-15
	22-32	Bedrock			---	---	---	---	---	---	---	---
Loope-----	0-1	Very gravelly sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	1-14	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-45	10-30	5-25	0-20	30-35	10-15
	14-24	Bedrock			---	---	---	---	---	---	---	---
Chenhigh-----	0-3	Very gravelly sandy loam	GM, SM	A-2	5-25	10-20	50-70	40-60	30-50	25-35	20-30	NP-5
	3-6	Very gravelly clay loam, very gravelly clay	GC	A-2	0-10	0-10	40-60	35-50	30-45	25-40	35-50	15-25
	6-10	Extremely gravelly clay, very gravelly clay, very gravelly clay loam	GC	A-2	0-5	0-10	25-45	15-35	10-25	5-20	35-50	15-25
	10-18	Extremely gravelly clay, very gravelly clay loam, very gravelly clay	GC	A-2	0-10	0-10	20-40	10-30	10-25	5-20	35-50	15-25
	18-28	Bedrock			---	---	---	---	---	---	---	---
391: Heenlake-----	0-6	Very stony sandy loam	GM, SM	A-2	10-35	20-35	55-70	50-65	40-55	25-35	20-30	NP-5
	6-18	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam	GC	A-2	10-30	10-30	35-60	25-50	20-45	15-35	30-40	10-15
	18-22	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam	GC	A-2	0-10	10-20	35-60	25-50	20-45	15-35	30-40	10-15
	22-32	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct 0-10	Pct 0-10						
Loope-----	In 0-1	Very gravelly sandy loam	GM, SM	A-1	Pct 0-10	Pct 0-10	55-70	35-50	25-40	20-30	Pct 20-30	NP-5
	1-14	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-45	10-30	5-25	0-20	30-35	10-15
	14-24	Bedrock			---	---	---	---	---	---	---	---
Dogbed-----	0-14	Very gravelly sandy loam	GM	A-1	0-10	0-10	45-60	35-50	25-40	15-30	20-30	NP-5
	14-50	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2	0-10	0-10	35-55	25-50	20-40	15-35	30-35	10-15
	50-60	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2	0-10	0-10	35-55	25-50	20-40	15-35	30-35	10-15
392: Heenlake-----	0-6	Very stony sandy loam	GM, SM	A-2	10-35	20-35	55-70	50-65	40-55	25-35	20-30	NP-5
	6-18	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam	GC	A-2	10-30	10-30	35-60	25-50	20-45	15-35	30-40	10-15
	18-22	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam	GC	A-2	0-10	10-20	35-60	25-50	20-45	15-35	30-40	10-15
	22-32	Bedrock			---	---	---	---	---	---	---	---
Loope-----	0-1	Very gravelly sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	1-14	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-45	10-30	5-25	0-20	30-35	10-15
	14-24	Bedrock			---	---	---	---	---	---	---	---
400: Pinew-----	0-3	Very gravelly sandy loam	GM, SM	A-2	0-8	0-8	55-70	40-55	30-45	25-35	20-30	NP-5
	3-8	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	8-15	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam	GC	A-2	0-10	5-20	35-60	25-50	20-45	15-35	30-40	10-15
	15-25	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

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TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
410: Wolfcut-----	0-1	Slightly decomposed plant material	GP	A-2, A-1	0-10	0-3	---	---	---	---	---	---
	1-4	Very stony loam	GM, SM	A-2	20-35	15-25	65-80	55-70	40-55	25-40	20-30	NP-5
	4-11	Extremely gravelly loam, extremely stony sandy clay loam, extremely gravelly sandy clay loam	GW-GC	A-2	15-25	10-25	25-45	15-35	5-25	0-20	30-35	10-15
	11-60	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-20	10-30	25-45	10-30	5-25	0-20	30-35	10-15
420: Buggin-----	0-2	Extremely bouldery loamy coarse sand	SP-SM	A-1	25-50	5-10	50-70	15-35	5-15	0-10	---	NP
	2-7	Very gravelly loamy coarse sand, extremely gravelly loamy coarse sand	SM, SP-SM	A-1	0-25	0-15	70-90	20-50	10-30	5-15	---	NP
	7-10	Very gravelly loamy coarse sand, extremely gravelly coarse sandy loam	SM, SP-SM	A-1	0-15	0-25	60-85	20-45	10-30	5-15	---	NP
	10-16	Bedrock			---	---	---	---	---	---	---	---
	16-26	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
430: Newcone-----	0-1	Very gravelly sandy loam	GM	A-1	0-10	0-10	45-60	35-50	25-40	15-30	20-30	NP-5
	1-6	Very gravelly sandy loam, very gravelly loam	GM	A-1	0-10	0-10	45-60	35-50	25-40	15-30	20-30	NP-5
	6-20	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
440: Dogbed-----	0-14	Very gravelly sandy loam	GM	A-1	0-10	0-10	45-60	35-50	25-40	15-30	20-30	NP-5
	14-50	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2	0-10	0-10	35-55	25-50	20-40	15-35	30-35	10-15
	50-60	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2	0-10	0-10	35-55	25-50	20-40	15-35	30-35	10-15

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
In					Pct	Pct					Pct	
Celeridge-----	0-3	Extremely bouldery sandy loam	GM, GP-GM	A-1	40-60	0-20	35-55	20-45	15-35	5-25	20-30	NP-5
	3-8	Extremely gravelly sandy loam	GM, GP-GM	A-1	0-20	10-20	20-35	15-25	10-20	5-15	20-30	NP-5
	8-19	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-35	15-25	5-15	0-10	30-35	10-15
	19-29	Bedrock			---	---	---	---	---	---	---	---
Carshal-----	0-2	Very gravelly sandy loam	GM	A-1	0-10	0-10	45-55	35-45	25-40	15-30	20-30	NP-5
	2-5	Gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam, gravelly sandy loam	GC	A-2, A-6	0-10	0-10	45-65	35-55	25-45	20-40	30-35	10-15
	5-14	Bedrock			---	---	---	---	---	---	---	---
	14-24	Bedrock			---	---	---	---	---	---	---	---
Joecut-----	0-1	Slightly decomposed plant material			0-10	0	---	---	---	---	---	---
	1-2	Very gravelly peaty loam	GM	A-1, A-2	0-15	0-10	40-55	35-50	30-40	20-30	20-30	NP-5
	2-14	Very gravelly loam	GM	A-2, A-1	0-15	0-10	40-55	35-50	30-40	20-30	20-30	NP-5
	14-40	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam, very cobbly clay loam	SC, GC	A-2	0-5	5-40	40-70	30-60	25-45	15-35	30-40	10-15
	40-60	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam, very cobbly clay loam	SC, GC	A-2	5-10	7-40	40-70	30-60	25-45	15-35	30-40	10-15
450: Carshal-----	0-2	Very gravelly sandy loam	GM	A-1	0-10	0-10	45-55	35-45	25-40	15-30	20-30	NP-5
	2-5	Gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam, gravelly sandy loam	GC	A-2, A-6	0-10	0-10	45-65	35-55	25-45	20-40	30-35	10-15
	5-14	Bedrock			---	---	---	---	---	---	---	---
	14-24	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In				Pct	Pct					Pct	
Loope-----	0-1	Very gravelly sandy loam	GM, SM	A-1	0-10	10-20	55-70	35-50	25-40	20-30	20-30	NP-5
	1-14	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-45	10-30	5-25	0-20	30-35	10-15
	14-24	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
460: Toejom-----	0-9	Very gravelly coarse sand	SM, SP-SM	A-1	5-15	5-18	65-85	40-60	25-40	5-20	---	NP
	9-14	Very gravelly loamy coarse sand, very gravelly coarse sand	SP-SM, SM	A-1	0-10	0-10	60-80	35-55	25-40	5-20	---	NP
	14-24	Bedrock			---	---	---	---	---	---	---	---
Pimogran-----	0-10	Very gravelly loamy coarse sand	SM, SP-SM	A-1	5-15	5-15	65-85	40-60	25-40	5-20	---	NP
	10-18	Very gravelly loamy coarse sand, very gravelly coarse sand	SM, SP-SM	A-1	0-10	0-15	65-85	40-60	25-40	5-20	---	NP
	18-28	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
461: Toejom-----	0-9	Very gravelly coarse sand	SM, SP-SM	A-1	5-15	5-18	65-85	40-60	25-40	5-20	---	NP
	9-14	Very gravelly loamy coarse sand, very gravelly coarse sand	SM, SP-SM	A-1	0-10	0-10	60-80	35-55	25-40	5-20	---	NP
	14-24	Bedrock			---	---	---	---	---	---	---	---
Pimogran-----	0-10	Very gravelly loamy coarse sand	SM, SP-SM	A-1	5-15	5-15	65-85	40-60	25-40	5-20	---	NP
	10-18	Very gravelly loamy coarse sand, very gravelly coarse sand	SM, SP-SM	A-1	0-10	0-15	65-85	40-60	25-40	5-20	---	NP
	18-28	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
462: Toejom-----	0-9	Very gravelly coarse sand	SM, SP-SM	A-1	5-15	5-18	65-85	40-60	25-40	5-20	---	NP
	9-14	Very gravelly loamy coarse sand, very gravelly coarse sand	SM, SP-SM	A-1	0-10	0-10	60-80	35-55	25-40	5-20	---	NP
	14-24	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Glenbrook-----	0-5	Gravelly loamy coarse sand	SM, SW-SM	A-1	0	0-10	80-95	60-75	40-50	5-20	---	NP
	5-14	Gravelly loamy coarse sand, gravelly sand, coarse sand	SW-SM, SM	A-1	0	0-10	80-95	60-80	40-50	5-20	---	NP
	14-24	Bedrock			---	---	---	---	---	---	---	---
Pimogran-----	0-10	Very gravelly loamy coarse sand	SM, SP-SM	A-1	5-15	5-15	65-85	40-60	25-40	5-20	---	NP
	10-18	Very gravelly loamy coarse sand, very gravelly coarse sand	SM, SP-SM	A-1	0-10	0-15	65-85	40-60	25-40	5-20	---	NP
	18-28	Bedrock			---	---	---	---	---	---	---	---
470: Sumeadow-----	0-0	Slightly decomposed plant material			0-10	0	---	---	---	---	---	---
	0-2	Very gravelly peaty sandy loam	GM	A-2, A-1	0-15	0-10	45-55	35-50	20-40	10-30	20-30	NP-5
	2-13	Extremely gravelly sandy loam	GP-GM	A-1	5-20	5-20	40-55	15-25	10-20	5-15	20-30	NP-5
	13-65	Extremely gravelly coarse sandy loam, extremely gravelly sandy loam	GP-GM	A-1	0-15	10-35	35-55	15-35	10-25	5-15	20-30	NP-5
Lostridge-----	0-3	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	45-60	35-50	20-40	10-30	20-30	NP-5
	3-11	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	45-60	35-50	20-40	10-30	20-30	NP-5
	11-23	Very gravelly coarse sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2	0-15	0-10	45-60	25-50	20-40	10-30	20-30	NP-5
	23-29	Very gravelly coarse sandy loam, very gravelly sandy loam	SM, GM	A-1, A-2	0-15	0-10	45-60	25-50	20-40	10-30	20-30	NP-5
	29-39	Bedrock			---	---	---	---	---	---	---	---
471: Sumeadow-----	0-0	Slightly decomposed plant material			0-10	0	---	---	---	---	---	---
	0-2	Very gravelly peaty sandy loam	GM	A-2, A-1	0-15	0-10	45-55	35-50	20-40	10-30	20-30	NP-5
	2-13	Extremely gravelly sandy loam	GP-GM	A-1	5-20	5-20	40-55	15-25	10-20	5-15	20-30	NP-5
	13-65	Extremely gravelly coarse sandy loam, extremely gravelly sandy loam	GP-GM	A-1	0-15	10-35	35-55	15-35	10-25	5-15	20-30	NP-5

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Sumeadow-----	0-0	Slightly decomposed plant material			0-10	0	---	---	---	---	---	---
	0-2	Very gravelly peaty sandy loam	GM	A-2, A-1	0-15	0-10	45-55	35-50	20-40	10-30	20-30	NP-5
	2-13	Extremely gravelly sandy loam	GP-GM	A-1	5-20	5-20	40-55	15-25	10-20	5-15	20-30	NP-5
	13-65	Extremely gravelly coarse sandy loam, extremely gravelly sandy loam	GP-GM	A-1	0-15	10-35	35-55	15-35	10-25	5-15	20-30	NP-5
480: Aspetill-----	0-5	Very gravelly sandy loam	GM	A-2	0-10	0-15	45-60	40-55	35-50	25-35	20-30	NP-5
	5-26	Extremely gravelly sandy clay loam, very gravelly coarse sandy loam, extremely cobbly sandy clay loam	GW-GC	A-2	0-20	25-55	25-45	15-30	10-25	5-15	30-35	10-15
	26-60	Extremely cobbly coarse sandy loam, very gravelly coarse sandy loam, extremely cobbly sandy clay loam, extremely gravelly coarse sandy loam	GW-GC	A-2	0-20	25-55	30-50	20-40	10-25	5-15	30-35	10-15
Aspetill-----	0-5	Very gravelly sandy loam	GM	A-2	0-10	0-15	45-60	40-55	35-50	25-35	20-30	NP-5
	5-26	Extremely gravelly sandy clay loam, very gravelly coarse sandy loam, extremely cobbly sandy clay loam	GW-GC	A-2	0-20	25-55	25-45	15-30	10-25	5-15	30-35	10-15
	26-60	Extremely cobbly coarse sandy loam, very gravelly coarse sandy loam, extremely cobbly sandy clay loam, extremely gravelly coarse sandy loam	GW-GC	A-2	0-20	25-55	30-50	20-40	10-25	5-15	30-35	10-15

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
481: Aspetill-----	0-5	Very gravelly sandy loam	GM	A-2	0-10	0-15	45-60	40-55	35-50	25-35	20-30	NP-5
	5-26	Extremely gravelly sandy clay loam, very gravelly coarse sandy loam, extremely cobble sandy clay loam	GW-GC	A-2	0-20	25-55	25-45	15-30	10-25	5-15	30-35	10-15
	26-60	Extremely cobble coarse sandy loam, very gravelly coarse sandy loam, extremely cobble sandy clay loam, extremely gravelly coarse sandy loam	GW-GC	A-2	0-20	25-55	30-50	20-40	10-25	5-15	30-35	10-15
Aspetill-----	0-5	Very stony coarse sandy loam	SM	A-1	20-40	10-25	65-80	50-65	30-45	15-25	20-25	NP-5
	5-26	Extremely gravelly sandy clay loam, very gravelly coarse sandy loam, extremely cobble sandy clay loam	GW-GC	A-2	0-20	25-55	25-45	15-30	10-25	5-15	30-35	10-15
	26-60	Extremely cobble coarse sandy loam, very gravelly coarse sandy loam, extremely cobble sandy clay loam, extremely gravelly coarse sandy loam	GW-GC	A-2	0-20	25-55	30-50	20-40	10-25	5-15	30-35	10-15

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
490: Cloudburst-----	0-8	Extremely bouldery coarse sandy loam	GM, GP-GM	A-1	40-60	0-20	35-55	20-45	15-35	5-25	20-30	NP-5
	8-16	Extremely cobbly sandy clay loam, extremely bouldery coarse sandy loam	GC, GP-GM	A-2	20-60	20-60	35-55	20-45	15-35	5-25	25-35	5-10
	16-29	Extremely cobbly coarse sandy loam, extremely bouldery sandy clay loam	GC, GP-GM	A-2	20-60	20-60	35-55	20-45	15-35	5-25	25-35	5-10
	29-60	Extremely cobbly coarse sandy loam, extremely bouldery sandy loam	GM, GP-GM	A-1	20-60	20-60	35-55	20-45	15-35	5-15	25-35	NP-5
Murain-----	0-2	Extremely stony coarse sandy loam	GM, GP-GM	A-1	40-60	0-20	35-55	20-45	15-35	5-25	20-30	NP-5
	2-7	Extremely cobbly coarse sandy loam	GM, GP-GM	A-1	25-40	40-50	35-60	25-50	15-35	5-25	20-30	NP-5
	7-18	Extremely stony sandy clay loam, extremely stony coarse sandy loam, extremely cobbly coarse sandy loam	GC, GP-GM	A-2	25-60	35-60	35-50	25-40	15-35	5-25	25-35	5-10
	18-26	Extremely cobbly sandy clay loam, extremely gravelly sandy clay loam, extremely stony sandy clay loam	GC, GP-GM	A-2	20-60	20-60	25-65	15-55	5-35	0-25	25-35	5-10
	26-41	Extremely gravelly coarse sandy loam, extremely cobbly sandy loam, extremely stony sandy clay loam	GC, GP-GM	A-2	20-60	20-60	25-65	15-55	5-35	0-25	25-35	5-10
	41-60	Extremely gravelly sandy clay loam, extremely cobbly sandy loam, extremely stony coarse sandy loam	GC, GP-GM	A-2	20-60	20-60	25-45	20-40	10-30	0-25	25-35	5-10

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
491: Cloudburst-----	0-8	Extremely bouldery coarse sandy loam	GM, GP-GM	A-1	40-60	0-20	35-55	20-45	15-35	5-25	20-30	NP-5
	8-16	Extremely cobbly sandy clay loam, extremely bouldery coarse sandy loam	GC, GP-GM	A-2	20-60	20-60	35-55	20-45	15-35	5-25	25-35	5-10
	16-29	Extremely cobbly coarse sandy loam, extremely bouldery sandy clay loam	GC, GP-GM	A-2	20-60	20-60	35-55	20-45	15-35	5-25	25-35	5-10
	29-60	Extremely cobbly coarse sandy loam, extremely bouldery sandy loam	GM, GP-GM	A-1	20-60	20-60	35-55	20-45	15-35	5-15	25-35	NP-5
Murain-----	0-2	Extremely stony coarse sandy loam	GM, GP-GM	A-1	40-60	0-20	35-55	20-45	15-35	5-25	20-30	NP-5
	2-7	Extremely cobbly coarse sandy loam	GM, GP-GM	A-1	25-40	40-50	35-60	25-50	15-35	5-25	20-30	NP-5
	7-18	Extremely stony sandy clay loam, extremely stony coarse sandy loam, extremely cobbly coarse sandy loam	GC, GP-GM	A-2	25-60	35-60	35-50	25-40	15-35	5-25	25-35	5-10
	18-26	Extremely cobbly sandy clay loam, extremely gravelly sandy clay loam, extremely stony sandy clay loam	GC, GP-GM	A-2	20-60	20-60	25-65	15-55	5-35	0-25	25-35	5-10
	26-41	Extremely gravelly coarse sandy loam, extremely cobbly sandy loam, extremely stony sandy clay loam	GC, GP-GM	A-2	20-60	20-60	25-65	15-55	5-35	0-25	25-35	5-10
	41-60	Extremely gravelly sandy clay loam, extremely cobbly sandy loam, extremely stony coarse sandy loam	GC, GP-GM	A-2	20-60	20-60	25-45	20-40	10-30	0-25	25-35	5-10

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In				Pct	Pct					Pct	
Hardtil-----	0-3	Gravelly loamy coarse sand	SM, SP-SM	A-1	0-20	0-15	80-90	60-70	30-50	5-15	0-14	NP
	3-7	Very gravelly coarse sandy loam	SM, SP-SM	A-1	0-15	0-15	55-70	35-50	20-35	5-20	10-25	NP-5
	7-18	Very gravelly coarse sandy loam	GM	A-1	0-15	0-15	45-55	25-35	25-35	10-20	10-25	NP-5
	18-28	Bedrock			---	---	---	---	---	---	---	---
500: Chrisflat-----	0-7	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	45-60	35-50	20-40	10-30	20-30	NP-5
	7-26	Very gravelly coarse sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	26-60	Extremely gravelly sandy clay loam, extremely stony sandy clay loam	GC, GP-GM	A-2	20-60	10-30	25-45	15-40	5-35	0-25	25-35	5-10
510: Rubble land-----	---	---	---	---	---	---	---	---	---	---	---	---
Lithnip-----	0-1	Extremely gravelly sandy loam	GP-GM	A-1	0-8	5-15	40-55	15-25	10-20	5-15	20-30	NP-5
	1-5	Very gravelly sandy loam, extremely gravelly sandy loam	GW-GM	A-1	0-5	5-15	25-45	15-35	5-25	0-20	20-30	NP-5
	5-15	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
Fishsnooze-----	0-1	Very gravelly peaty coarse sandy loam	GM	A-2, A-1	0-15	0-10	40-60	35-50	20-40	10-30	20-30	NP-5
	1-9	Very gravelly coarse sandy loam, extremely gravelly coarse sandy loam, extremely gravelly sandy loam	GP-GM	A-1	0-15	0-15	25-45	15-35	10-25	5-15	20-30	NP-5
	9-13	Extremely gravelly coarse sandy loam, very gravelly coarse sandy loam, extremely gravelly sandy loam	GP-GM	A-1	0-15	10-30	35-55	15-35	10-25	5-15	20-30	NP-5
	13-35	Extremely cobbly coarse sandy loam, extremely gravelly sandy loam	GP-GM	A-1	0-15	20-60	25-65	10-45	10-25	5-15	20-30	NP-5
	35-45	Bedrock			---	---	---	---	---	---	---	---

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
511: Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
Snowtell-----	0-3	Very gravelly coarse sandy loam	SM, SP-SM	A-1	0-15	0-20	55-75	35-50	20-35	5-20	10-25	NP-5
	3-10	Very gravelly coarse sandy loam	SM, SP-SM	A-1	0-15	0-20	55-75	35-50	20-35	5-20	10-25	NP-5
	10-20	Bedrock			---	---	---	---	---	---	---	---
Forsell-----	0-1	Very gravelly peaty coarse sandy loam	GM	A-2, A-1	0-15	0-10	40-55	35-50	20-40	10-30	20-30	NP-5
	1-11	Very gravelly coarse sandy loam, extremely gravelly coarse sandy loam	GW-GM	A-1	0-15	0-20	35-55	15-45	10-25	5-15	20-30	NP-5
	11-27	Extremely stony sandy loam, extremely stony coarse sandy loam	GP-GM	A-1	40-50	15-25	30-45	20-35	15-25	5-15	20-30	NP-5
	27-60	Extremely gravelly sandy loam, extremely stony coarse sandy loam	GP-GM	A-1	10-35	15-25	30-40	20-30	15-25	5-15	20-30	NP-5
512: Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
Snowtell-----	0-3	Very gravelly coarse sandy loam	SM, SP-SM	A-1	0-15	0-20	55-75	35-50	20-35	5-20	10-25	NP-5
	3-10	Very gravelly coarse sandy loam	SM, SP-SM	A-1	0-15	0-20	55-75	35-50	20-35	5-20	10-25	NP-5
	10-20	Bedrock			---	---	---	---	---	---	---	---
513: Rubble land-----	---	---	---	---	---	---	---	---	---	---	---	---
Holdon-----	0-3	Extremely gravelly loamy coarse sand	SM, SP-SM	A-1	0-15	10-20	40-60	20-40	10-25	5-15	0-14	NP
	3-23	Extremely gravelly sandy loam, extremely gravelly coarse sandy loam	GM, GW-GM	A-1	0-10	10-40	30-45	10-35	5-25	0-20	15-20	NP-5
	23-47 47-57	Cobbles Bedrock	GP	A-1	5-20 ---	80-90 ---	15-25 ---	10-20 ---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
520: Canfire-----	0-2	Very gravelly sandy loam	GM, SM	A-1	0-15	0-15	55-70	35-50	25-40	15-30	20-30	NP-5
	2-7	Very gravelly loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	0-15	35-55	30-50	25-45	20-40	30-35	10-15
	7-17	Very gravelly loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	0-15	35-55	30-50	25-45	20-40	30-35	10-15
	17-27	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In				Pct	Pct					Pct	
Crispy-----	0-7	Very gravelly loam	GM	A-1	0-15	0-15	45-55	35-45	25-40	15-30	20-30	NP-5
	7-15	Very gravelly loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	0-15	35-55	30-50	25-45	20-40	30-35	10-15
	15-25	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
530: Elaero-----	0-6	Very gravelly loamy coarse sand	SM, SP-SM	A-1	5-15	5-15	65-85	40-60	25-40	5-20	---	NP
	6-16	Very gravelly coarse sandy loam, very gravelly sandy loam	SM, SP-SM	A-1	0-15	0-15	70-90	35-50	20-35	5-20	20-25	NP-5
	16-21	Very gravelly coarse sandy loam, very gravelly sandy loam	SM, SP-SM	A-1	0-10	0-25	70-90	35-50	20-35	5-20	20-25	NP-5
	21-31	Bedrock			---	---	---	---	---	---	---	---
Lockgate-----	0-14	Very gravelly loamy coarse sand	SM, SP-SM	A-1	5-15	5-15	65-85	40-60	25-40	5-20	---	NP
	14-23	Extremely stony coarse sandy loam, extremely gravelly coarse sandy loam	SP-SM	A-1	30-65	0-20	50-70	10-30	5-20	0-10	20-25	NP-5
	23-34	Extremely gravelly coarse sandy loam, extremely stony coarse sandy loam	SP-SM	A-1	0-25	0-25	55-70	15-30	5-20	0-10	20-25	NP-5
	34-42	Extremely gravelly coarse sand, extremely gravelly loamy coarse sand	SP-SM	A-1	0-20	0-20	60-70	5-20	0-15	0-10	---	NP
	42-52	Bedrock			---	---	---	---	---	---	---	---
Granhogany-----	0-4	Very gravelly loamy coarse sand	SM, SP-SM	A-1	0-15	5-15	65-85	40-60	25-40	5-20	---	NP
	4-15	Very gravelly coarse sandy loam, very gravelly loamy coarse sand, extremely gravelly loamy coarse sand	SM, SW-SM	A-1	0-10	0-10	55-75	25-50	15-30	5-15	---	NP
	15-25	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Granidry-----	0-3	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	60-80	35-50	20-40	10-30	20-30	NP-5
	3-11	Very gravelly coarse sandy loam, extremely gravelly coarse sandy loam	SP-SM	A-1	0-15	0-15	45-70	10-35	5-20	0-10	20-25	NP-5
	11-16	Extremely gravelly coarse sandy loam, extremely gravelly sandy clay loam	SP-SC	A-2	0-10	0-10	55-75	10-25	5-20	0-10	30-35	10-15
	16-26	Bedrock			---	---	---	---	---	---	---	---
531: Elaero-----	0-6	Gravelly coarse sandy loam	SM	A-1, A-2	0-15	0-10	85-95	50-75	30-40	15-35	20-30	NP-5
	6-16	Very gravelly coarse sandy loam, very gravelly sandy loam	SM, SP-SM	A-1	0-15	0-15	70-90	35-50	20-35	5-20	20-25	NP-5
	16-21	Very gravelly coarse sandy loam, very gravelly sandy loam	SM, SP-SM	A-1	0-10	0-25	70-90	35-50	20-35	5-20	20-25	NP-5
	21-31	Bedrock			---	---	---	---	---	---	---	---
Elaero-----	0-6	Very gravelly loamy coarse sand	SM, SP-SM	A-1	5-15	5-15	65-85	40-60	25-40	5-20	---	NP
	6-16	Very gravelly coarse sandy loam, very gravelly sandy loam	SM, SP-SM	A-1	0-15	0-15	70-90	35-50	20-35	5-20	20-25	NP-5
	16-21	Very gravelly coarse sandy loam, very gravelly sandy loam	SM, SP-SM	A-1	0-10	0-25	70-90	35-50	20-35	5-20	20-25	NP-5
	21-31	Bedrock			---	---	---	---	---	---	---	---
532: Elaero-----	0-6	Very gravelly loamy coarse sand	SM, SP-SM	A-1	5-15	5-15	65-85	40-60	25-40	5-20	---	NP
	6-16	Very gravelly coarse sandy loam, very gravelly sandy loam	SM, SP-SM	A-1	0-15	0-15	70-90	35-50	20-35	5-20	20-25	NP-5
	16-21	Very gravelly coarse sandy loam, very gravelly sandy loam	SM, SP-SM	A-1	0-10	0-25	70-90	35-50	20-35	5-20	20-25	NP-5
	21-31	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Granidry-----	0-3	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	60-80	35-50	20-40	10-30	20-30	NP-5
	3-11	Very gravelly coarse sandy loam, extremely gravelly coarse sandy loam	SP-SM	A-1	0-15	0-15	45-70	10-35	5-20	0-10	20-25	NP-5
	11-16	Extremely gravelly coarse sandy loam, extremely gravelly sandy clay loam	SP-SC	A-2	0-10	0-10	55-75	10-25	5-20	0-10	30-35	10-15
	16-26	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
540: Lostcannon, moist-----	0-18	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	60-80	35-50	20-40	10-30	15-20	NP-5
	18-25	Extremely gravelly coarse sandy loam	GP-GM	A-1	10-30	5-20	30-45	10-25	5-20	0-10	20-25	NP-5
	25-36	Extremely gravelly coarse sandy loam	GP-GM	A-1	10-30	5-20	30-45	10-25	5-20	0-10	20-25	NP-5
	36-60	Very gravelly coarse sandy loam, extremely gravelly coarse sandy loam	SW-SM	A-1	0-15	0-20	45-65	25-45	5-20	0-10	20-25	NP-5
Lostcannon-----	0-18	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	60-80	35-50	20-40	10-30	15-20	NP-5
	18-25	Extremely gravelly coarse sandy loam	GP-GM	A-1	10-30	5-20	30-45	10-25	5-20	0-10	20-25	NP-5
	25-36	Extremely gravelly coarse sandy loam	GP-GM	A-1	10-30	5-20	30-45	10-25	5-20	0-10	20-25	NP-5
	36-60	Very gravelly coarse sandy loam, extremely gravelly coarse sandy loam	SW-SM	A-1	0-15	0-20	45-65	25-45	5-20	0-10	20-25	NP-5

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
560: Dunderberg-----	0-5	Very gravelly ashy sandy loam	GM	A-1, A-2	0-10	0-15	40-55	30-45	25-40	20-35	20-30	NP-5
	5-9	Extremely gravelly ashy sandy loam	GP-GM	A-1	0-10	0-25	40-55	15-25	10-20	5-15	20-30	NP-5
	9-28	Extremely cobblely ashy sandy loam	GM	A-1	0-10	50-70	40-60	20-50	15-35	5-20	20-30	NP-5
	28-39	Extremely cobblely sandy loam, extremely gravelly ashy sandy loam	GM	A-1	0-10	25-60	25-45	15-35	10-30	5-20	15-25	NP-5
	39-60	Extremely gravelly sandy loam, extremely cobblely sandy loam	GM	A-1	0-10	25-60	25-45	15-35	10-30	5-20	20-30	NP-5
Dunderberg, warm	0-5	Very gravelly ashy sandy loam	GM	A-1, A-2	0-10	0-15	40-55	30-45	25-40	20-35	20-30	NP-5
	5-9	Extremely gravelly ashy sandy loam	GP-GM	A-1	0-10	0-25	40-55	15-25	10-20	5-15	20-30	NP-5
	9-28	Extremely cobblely ashy sandy loam	GM	A-1	0-10	50-70	40-60	20-50	15-35	5-20	20-30	NP-5
	28-39	Extremely cobblely sandy loam, extremely gravelly ashy sandy loam	GM	A-1	0-10	25-60	25-45	15-35	10-30	5-20	15-25	NP-5
	39-60	Extremely gravelly sandy loam, extremely cobblely sandy loam	GM	A-1	0-10	25-60	25-45	15-35	10-30	5-20	20-30	NP-5
Conwayridge-----	0-4	Extremely gravelly ashy loam	GM	A-1	0-25	0-25	30-40	15-25	10-20	10-15	20-30	NP-5
	4-11	Extremely gravelly ashy loam, extremely cobblely ashy sandy loam	GM	A-1	0-20	0-20	30-40	15-25	10-20	5-20	15-25	NP-5
	11-63	Extremely gravelly sandy loam, extremely cobblely sandy loam	GM	A-1	0-20	35-65	40-60	20-50	15-35	5-20	20-30	NP-5

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Dunderberg, moist-----	0-5	Very gravelly ashy sandy loam	GM	A-1, A-2	0-10	0-15	40-55	30-45	25-40	20-35	20-30	NP-5
	5-9	Extremely gravelly ashy sandy loam	GP-GM	A-1	0-10	0-25	40-55	15-25	10-20	5-15	20-30	NP-5
	9-28	Extremely cobblely ashy sandy loam	GM	A-1	0-10	50-70	40-60	20-50	15-35	5-20	20-30	NP-5
	28-39	Extremely cobblely sandy loam, extremely gravelly ashy sandy loam	GM	A-1	0-10	25-60	25-45	15-35	10-30	5-20	15-25	NP-5
	39-60	Extremely gravelly sandy loam, extremely cobblely sandy loam	GM	A-1	0-10	25-60	25-45	15-35	10-30	5-20	20-30	NP-5
561: Dunderberg-----	0-5	Very gravelly ashy sandy loam	GM	A-1, A-2	0-10	0-15	40-55	30-45	25-40	20-35	20-30	NP-5
	5-9	Extremely gravelly ashy sandy loam	GP-GM	A-1	0-10	0-25	40-55	15-25	10-20	5-15	20-30	NP-5
	9-28	Extremely cobblely ashy sandy loam	GM	A-1	0-10	50-70	40-60	20-50	15-35	5-20	20-30	NP-5
	28-39	Extremely cobblely sandy loam, extremely gravelly ashy sandy loam	GM	A-1	0-10	25-60	25-45	15-35	10-30	5-20	15-25	NP-5
	39-60	Extremely gravelly sandy loam, extremely cobblely sandy loam	GM	A-1	0-10	25-60	25-45	15-35	10-30	5-20	20-30	NP-5
Dunderberg, warm	0-5	Very gravelly ashy sandy loam	GM	A-1, A-2	0-10	0-15	40-55	30-45	25-40	20-35	20-30	NP-5
	5-9	Extremely gravelly ashy sandy loam	GP-GM	A-1	0-10	0-25	40-55	15-25	10-20	5-15	20-30	NP-5
	9-28	Extremely cobblely ashy sandy loam	GM	A-1	0-10	50-70	40-60	20-50	15-35	5-20	20-30	NP-5
	28-39	Extremely cobblely sandy loam, extremely gravelly ashy sandy loam	GM	A-1	0-10	25-60	25-45	15-35	10-30	5-20	15-25	NP-5
	39-60	Extremely gravelly sandy loam, extremely cobblely sandy loam	GM	A-1	0-10	25-60	25-45	15-35	10-30	5-20	20-30	NP-5

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Dunderberg, moist-----	0-5	Very gravelly ashy sandy loam	GM	A-1, A-2	0-10	0-15	40-55	30-45	25-40	20-35	20-30	NP-5
	5-9	Extremely gravelly ashy sandy loam	GP-GM	A-1	0-10	0-25	40-55	15-25	10-20	5-15	20-30	NP-5
	9-28	Extremely cobbly ashy sandy loam	GM	A-1	0-10	50-70	40-60	20-50	15-35	5-20	20-30	NP-5
	28-39	Extremely cobbly sandy loam,	GM	A-1	0-10	25-60	25-45	15-35	10-30	5-20	15-25	NP-5
		extremely gravelly ashy sandy loam										
	39-60	Extremely gravelly sandy loam,	GM	A-1	0-10	25-60	25-45	15-35	10-30	5-20	20-30	NP-5
		extremely cobbly sandy loam										
570: Angelwhine-----	0-15	Extremely gravelly coarse sandy loam	GP-GM	A-1	0-10	5-20	35-45	15-25	10-20	5-15	20-30	NP-5
	15-23	Very gravelly coarse sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-15	0-10	35-55	25-45	20-40	10-30	20-30	NP-5
	23-43	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam,	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
		very gravelly coarse sandy loam										
	43-60	Extremely gravelly sandy loam, very gravelly sandy loam, very gravelly coarse sandy loam,	GC	A-2	0-10	5-20	30-45	20-35	15-30	10-25	30-35	10-15
		extremely gravelly coarse sandy loam										
Hawkinspeak-----	0-3	Very gravelly sandy loam	GM, SM	A-2	5-25	5-20	55-70	50-65	40-55	25-35	20-30	NP-5
	3-9	Very gravelly sandy loam	GM	A-1, A-2	5-15	0-10	30-55	25-50	20-40	10-30	20-30	NP-5
	9-33	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	5-20	35-55	30-50	25-45	20-40	30-35	10-15
	33-43	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Hawkridge-----	0-1	Extremely gravelly coarse sandy loam	GP-GM	A-1	0-10	5-20	40-55	15-25	10-20	5-15	20-30	NP-5
	1-7	Very gravelly sandy loam	GM	A-1, A-2	0-10	5-20	30-55	25-50	20-40	10-30	20-30	NP-5
	7-14	Very gravelly loam, extremely gravelly coarse sandy loam, very gravelly sandy clay loam	GC, GP-GC	A-2	0-10	5-20	25-45	20-40	10-30	5-20	30-35	10-15
	14-24	Bedrock			---	---	---	---	---	---	---	---
580: Murain-----	0-2	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	45-60	35-50	20-40	10-30	20-30	NP-5
	2-7	Extremely cobble coarse sandy loam	GM, GP-GM	A-1	25-40	40-50	35-60	25-50	15-35	5-25	20-30	NP-5
	7-18	Extremely stony sandy clay loam, extremely stony coarse sandy loam, extremely cobble coarse sandy loam	GC, GP-GM	A-2	25-60	35-60	35-50	25-40	15-35	5-25	25-35	5-10
	18-26	Extremely cobble sandy clay loam, extremely gravelly sandy clay loam, extremely stony sandy clay loam	GC, GP-GM	A-2	20-60	20-60	25-65	15-55	5-35	0-25	25-35	5-10
	26-41	Extremely gravelly coarse sandy loam, extremely cobble sandy loam, extremely stony sandy clay loam	GC, GP-GM	A-2	20-60	20-60	25-65	15-55	5-35	0-25	25-35	5-10
	41-60	Extremely gravelly sandy clay loam, extremely cobble sandy loam, extremely stony coarse sandy loam	GC, GP-GM	A-2	20-60	20-60	25-45	20-40	10-30	0-25	25-35	5-10

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Shorthike-----	0-2	Very gravelly loamy coarse sand	SM, SP-SM	A-1	0-15	0-15	50-65	35-50	25-35	5-20	---	NP
	2-10	Very gravelly coarse sandy loam	SM, SP-SM	A-1	0-15	0-15	50-65	35-50	25-40	5-20	---	NP
	10-30	Extremely gravelly coarse sandy loam, extremely cobbly coarse sandy loam	GM	A-1	0-15	15-65	40-60	20-50	15-35	5-20	20-30	NP-5
	30-60	Extremely gravelly coarse sandy loam, extremely cobbly coarse sandy loam	GM	A-1	0-15	15-65	40-60	20-50	15-35	5-20	20-30	NP-5
Murain, moist---	0-2	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	45-60	35-50	20-40	10-30	20-30	NP-5
	2-7	Extremely cobbly coarse sandy loam	GM, GP-GM	A-1	25-40	40-50	35-60	25-50	15-35	5-25	20-30	NP-5
	7-18	Extremely stony sandy clay loam, extremely stony coarse sandy loam, extremely cobbly coarse sandy loam	GC, GP-GM	A-2	25-60	35-60	35-50	25-40	15-35	5-25	25-35	5-10
	18-26	Extremely cobbly sandy clay loam, extremely gravelly sandy clay loam, extremely stony sandy clay loam	GC, GP-GM	A-2	20-60	20-60	25-65	15-55	5-35	0-25	25-35	5-10
	26-41	Extremely gravelly coarse sandy loam, extremely cobbly sandy loam, extremely stony sandy clay loam	GC, GP-GM	A-2	20-60	20-60	25-65	15-55	5-35	0-25	25-35	5-10
	41-60	Extremely gravelly sandy clay loam, extremely cobbly sandy loam, extremely stony coarse sandy loam	GC, GP-GM	A-2	20-60	20-60	25-45	20-40	10-30	0-25	25-35	5-10

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
581: Murain-----	0-2	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	45-60	35-50	20-40	10-30	20-30	NP-5
	2-7	Extremely cobble coarse sandy loam	GM, GP-GM	A-1	25-40	40-50	35-60	25-50	15-35	5-25	20-30	NP-5
	7-18	Extremely stony sandy clay loam, extremely stony coarse sandy loam, extremely cobble coarse sandy loam	GC, GP-GM	A-2	25-60	35-60	35-50	25-40	15-35	5-25	25-35	5-10
	18-26	Extremely cobble sandy clay loam, extremely gravelly sandy clay loam, extremely stony sandy clay loam	GC, GP-GM	A-2	20-60	20-60	25-65	15-55	5-35	0-25	25-35	5-10
	26-41	Extremely gravelly coarse sandy loam, extremely cobble sandy loam, extremely stony sandy clay loam	GC, GP-GM	A-2	20-60	20-60	25-65	15-55	5-35	0-25	25-35	5-10
	41-60	Extremely gravelly sandy clay loam, extremely cobble sandy loam, extremely stony coarse sandy loam	GC, GP-GM	A-2	20-60	20-60	25-45	20-40	10-30	0-25	25-35	5-10

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
In					Pct	Pct					Pct	
Murain-----	0-2	Extremely stony coarse sandy loam	GM, GP-GM	A-1	40-60	0-20	35-55	20-45	15-35	5-25	20-30	NP-5
	2-7	Extremely cobbly coarse sandy loam	GM, GP-GM	A-1	25-40	40-50	35-60	25-50	15-35	5-25	20-30	NP-5
	7-18	Extremely stony sandy clay loam, extremely stony coarse sandy loam, extremely cobbly coarse sandy loam	GC, GP-GM	A-2	25-60	35-60	35-50	25-40	15-35	5-25	25-35	5-10
	18-26	Extremely cobbly sandy clay loam, extremely gravelly sandy clay loam, extremely stony sandy clay loam	GC, GP-GM	A-2	20-60	20-60	25-65	15-55	5-35	0-25	25-35	5-10
	26-41	Extremely gravelly coarse sandy loam, extremely cobbly sandy loam, extremely stony sandy clay loam	GC, GP-GM	A-2	20-60	20-60	25-65	15-55	5-35	0-25	25-35	5-10
	41-60	Extremely gravelly sandy clay loam, extremely cobbly sandy loam, extremely stony coarse sandy loam	GC, GP-GM	A-2	20-60	20-60	25-45	20-40	10-30	0-25	25-35	5-10
590: Loope-----	0-1	Very gravelly sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	1-14	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-45	10-30	5-25	0-20	30-35	10-15
	14-24	Bedrock			---	---	---	---	---	---	---	---
Heenlake-----	0-6	Very stony sandy loam	GM, SM	A-2	10-35	20-35	55-70	50-65	40-55	25-35	20-30	NP-5
	6-18	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam	GC	A-2	10-30	10-30	35-60	25-50	20-45	15-35	30-40	10-15
	18-22	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam	GC	A-2	0-10	10-20	35-60	25-50	20-45	15-35	30-40	10-15
	22-32	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

[illegible]

TABLE 23.--Engineering Properties

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TABLE 23.--Engineering Properties

[illegible]

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
620: Indian Creek----	0-1	Very gravelly sandy loam	GC-GM, GC	A-2	0	0-5	40-60	35-50	25-40	20-30	20-30	5-10
	1-3	Gravelly loam, gravelly clay loam, sandy clay loam, loam	SC	A-6	0	0-8	75-100	60-85	50-60	40-55	30-40	10-20
	3-20	Gravelly clay, clay, sandy clay	CH, CL	A-7	0	0-8	80-100	60-90	55-80	50-80	45-60	25-40
	20-25	Cemented material			---	---	---	---	---	---	---	---
	25-60	Stratified extremely gravelly loamy coarse sand to gravelly sandy clay loam	GC-GM, GM, GP-GC	A-1, A-2	0-8	5-30	35-55	30-55	15-25	5-15	15-30	NP-10
630: Olac-----	0-3	Very gravelly sandy loam	GM, SM	A-1	0-10	0-15	55-70	35-50	25-40	20-30	20-30	NP-5
	3-10	Extremely gravelly clay loam, extremely gravelly loam	GC	A-2	5-10	10-20	30-45	20-35	15-30	10-25	30-40	15-20
	10-20	Bedrock			---	---	---	---	---	---	---	---
Flex-----	0-2	Very gravelly sandy loam	GM, SM	A-1	0-10	0-15	55-70	35-50	25-40	20-30	20-30	NP-5
	2-10	Very gravelly sandy clay loam, very gravelly sandy loam	GC, GC-GM	A-1, A-2	0	0-10	50-60	40-50	30-45	15-25	15-25	5-15
	10-20	Bedrock			---	---	---	---	---	---	---	---
Duco-----	0-3	Very gravelly sandy loam	GM, SM	A-1	0-15	0-15	55-70	35-50	25-40	20-30	20-30	NP-5
	3-5	Gravelly loam	SC	A-4	0-1	5-15	75-90	70-80	50-75	40-60	20-30	5-10
	5-18	Very gravelly clay loam, extremely stony clay loam, very cobbly sandy clay loam	GC	A-2	5-30	10-55	35-60	30-55	20-35	15-30	35-40	15-20
	18-28	Bedrock			---	---	---	---	---	---	---	---
640: Koontz-----	0-2	Very gravelly sandy loam	GM, SM	A-1	0	0-15	50-65	35-50	25-35	10-15	15-25	NP-5
	2-12	Very gravelly loam, very gravelly clay loam	GC	A-2, A-6	0	0-15	50-65	35-50	30-45	25-40	30-40	10-20
	12-22	Bedrock			---	---	---	---	---	---	---	---
Nosrac-----	0-12	Very gravelly sandy loam	GM, SM	A-1	0	0-15	50-65	35-50	25-35	10-15	15-25	NP-5
	12-45	Very gravelly clay loam, very gravelly loam	GC	A-2	0-10	5-25	45-55	40-50	30-45	25-35	35-40	15-20
	45-60	Very gravelly loam, very gravelly fine sandy loam, very gravelly clay loam	GC	A-2, A-6	0-10	10-25	35-55	30-50	25-45	20-40	30-35	10-15

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
650: Shree-----	0-14	Very gravelly loam	GC	A-2	0	0-5	40-60	35-50	30-50	20-35	25-35	5-15
	14-40	Extremely gravelly sandy clay loam, very gravelly sandy clay loam, very gravelly clay loam	GC	A-2	0-10	5-20	45-55	25-40	20-30	10-25	35-45	15-20
	40-60	Extremely gravelly sandy loam, extremely gravelly loam, very gravelly fine sandy loam	GC, GC-GM	A-2	0-5	0-30	45-55	25-40	15-25	10-15	20-35	5-15
651: Shree-----	0-14	Very gravelly sandy loam	GC	A-2	0	0-5	40-60	35-50	30-45	20-30	25-35	5-15
	14-40	Extremely gravelly sandy clay loam, very gravelly sandy clay loam, very gravelly clay loam	GC	A-2	0-10	5-20	45-55	25-40	20-30	10-25	35-45	15-20
	40-60	Extremely gravelly sandy loam, extremely gravelly loam, very gravelly fine sandy loam	GC, GC-GM	A-2	0-5	0-30	45-55	25-40	15-25	10-15	20-35	5-15
Holbrook-----	0-8	Very gravelly loam	GC	A-2	0	0-5	40-60	35-50	30-50	20-35	25-35	5-15
	8-60	Stratified stony sand to extremely gravelly loam	GM	A-1	5-30	10-30	30-50	20-40	15-35	10-20	---	NP
660: Delhew-----	0-16	Very gravelly loamy coarse sand	SP-SM	A-1	1-5	1-5	60-80	30-50	10-25	5-10	15-20	NP-5
	16-27	Very gravelly coarse sandy loam	SM	A-1	0-5	0-5	60-80	30-45	15-30	10-20	20-25	NP-5
	27-40	Extremely gravelly coarse sandy loam	SP	A-1	0-5	0-5	50-70	10-25	5-10	0-5	20-25	NP-5
	40-60	Extremely gravelly coarse sandy loam	SP	A-1	0-5	0-5	50-70	10-25	5-10	0-5	15-20	NP-5

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Grandridge-----	0-1	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	60-80	35-50	20-40	10-30	20-30	NP-5
	1-10	Very gravelly loam, very gravelly sandy clay loam	SC	A-2	0-10	0-10	70-80	30-45	15-35	10-20	30-35	10-15
	10-18	Very gravelly loam, very gravelly sandy clay loam	SC	A-2	0-10	0-10	70-80	30-45	15-35	10-20	30-35	10-15
	18-28	Bedrock			---	---	---	---	---	---	---	---
Bakscratch-----	0-7	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-15	60-80	35-50	20-40	10-30	20-30	NP-5
	7-11	Very gravelly coarse sandy loam	SP-SM, SM	A-1	0-15	0-15	55-80	15-50	10-25	5-15	20-25	NP-5
	11-16	Very gravelly coarse sandy loam	SP-SM, SM	A-1	0-15	0-15	55-80	15-50	10-25	5-15	20-25	NP-5
	16-26	Bedrock			---	---	---	---	---	---	---	---
670: Springmeyer-----	0-2	Gravelly sandy loam	SC-SM, SM	A-2, A-4	0	0-8	65-80	55-75	45-60	25-40	20-30	NP-10
	2-10	Gravelly sandy loam	SC-SM, SM	A-2, A-4	0	0-8	65-80	55-75	45-60	25-40	20-30	NP-10
	10-32	Sandy clay loam, clay loam, gravelly sandy clay loam	CL, SC	A-2, A-6, A-7	0	0-8	80-95	65-85	60-80	30-60	35-45	15-20
	32-60	Stratified extremely gravelly loamy sand to sandy clay loam	SC	A-2	0	0-5	70-85	55-70	30-45	20-30	25-35	10-15
671: Springmeyer-----	0-2	Gravelly sandy loam	SC-SM, SM	A-2, A-4	0	0-8	65-80	55-75	45-60	25-40	20-30	NP-10
	2-10	Gravelly sandy loam	SC-SM, SM	A-2, A-4	0	0-8	65-80	55-75	45-60	25-40	20-30	NP-10
	10-22	Sandy clay loam, clay loam, gravelly sandy clay loam	CL, SC	A-2, A-6, A-7	0	0-8	80-95	65-85	60-80	30-60	35-45	15-20
	22-60	Stratified extremely gravelly loamy sand to sandy clay loam	SC	A-2	0	0-5	70-85	55-70	30-45	20-30	25-35	10-15
Cassiro-----	0-15	Gravelly sandy loam	SM	A-1, A-2	0	0-5	65-80	55-70	30-50	15-30	---	NP
	15-45	Very gravelly sandy clay, very gravelly clay	GC, SC	A-2	0	5-15	50-75	40-50	25-45	15-35	25-50	10-25
	45-55	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
680: Rolldown-----	In				Pct	Pct					Pct	
	0-2	Extremely gravelly ashy loam	GW-GM	A-1	0-10	0-15	30-40	20-30	10-20	5-15	20-30	NP-5
	2-10	Very gravelly ashy loam	GW-GM	A-1	0-10	0-15	40-55	30-45	20-35	10-25	20-30	NP-5
	10-60	Extremely gravelly loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-15	0-15	25-45	10-30	5-25	0-20	30-35	10-15
Mountpatterson--	0-9	Extremely gravelly ashy sandy loam	GM, GW-GM	A-1	0-15	15-30	35-45	25-35	15-25	5-15	0-14	NP
	9-18	Extremely gravelly ashy loam, extremely gravelly ashy sandy clay loam	GW-GC	A-2	0-10	15-30	25-45	10-30	5-25	0-20	30-35	10-15
	18-28	Bedrock			---	---	---	---	---	---	---	---
Rubble land-----	---	---	---	---	---	---	---	---	---	---	---	---
700: Coldtree-----	0-1	Very gravelly loamy coarse sand	SM, SP-SM	A-1	0-15	0-15	65-85	40-60	25-40	5-20	---	NP
	1-9	Extremely gravelly sandy loam, extremely gravelly coarse sandy loam	GM, GW-GM	A-1	0-10	5-20	30-45	10-35	5-25	0-20	15-20	NP-5
	9-24	Extremely gravelly sandy loam, extremely cobbly coarse sandy loam, extremely gravelly loam, extremely cobbly loam	GM	A-1	0-20	30-65	30-50	20-40	15-35	5-20	20-30	NP-5
	24-44	Extremely gravelly sandy loam, extremely cobbly coarse sandy loam, extremely gravelly loam, extremely cobbly loam	GM	A-1	0-20	35-65	40-60	20-50	15-35	5-20	20-30	NP-5
	44-54	Bedrock			---	---	---	---	---	---	---	---
	Rubble land-----	---	---	---	---	---	---	---	---	---	---	---
710: Bakscratch-----	0-7	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-15	60-80	35-50	20-40	10-30	20-30	NP-5
	7-11	Very gravelly coarse sandy loam	SP-SM, SM	A-1	0-15	0-15	55-80	15-50	10-25	5-15	20-25	NP-5
	11-16	Very gravelly coarse sandy loam	SP-SM, SM	A-1	0-15	0-15	55-80	15-50	10-25	5-15	20-25	NP-5
	16-26	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct 0-15	Pct 0-10						
Grandridge-----	In 0-1	Very gravelly coarse sandy loam	GM, SM	A-1, A-2			60-80	35-50	20-40	10-30		NP-5
	1-10	Very gravelly loam, very gravelly sandy clay loam	SC	A-2	0-10	0-10	70-80	30-45	15-35	10-20	30-35	10-15
	10-18	Very gravelly loam, very gravelly sandy clay loam	SC	A-2	0-10	0-10	70-80	30-45	15-35	10-20	30-35	10-15
	18-28	Bedrock			---	---	---	---	---	---	---	---
McTom-----	0-2	Very stony slightly decomposed plant material			45-55	15-40	---	---	---	---	---	---
	2-18	Extremely stony loamy coarse sand	SP-SM	A-1	25-50	15-55	50-70	15-35	5-15	0-10	---	NP
	18-34	Extremely cobble loamy coarse sand, extremely gravelly loamy coarse sand, extremely stony loamy coarse sand	SP-SM	A-1	10-40	20-60	50-70	10-20	5-15	0-10	---	NP
	34-44	Bedrock			---	---	---	---	---	---	---	---
720: Nohelp-----	0-11	Gravelly ashy sandy loam	SM	A-1	0-15	0-15	65-85	50-75	35-65	15-35	20-40	NP-5
	11-21	Very gravelly clay loam, very cobble clay	SC, GC	A-2	0-10	10-40	40-70	30-60	25-45	15-35	35-50	15-25
	21-60	Very gravelly clay, extremely gravelly clay loam, extremely cobble clay loam	GC	A-2	0-8	5-45	35-50	20-40	15-35	10-30	35-50	15-25
Joenchris-----	0-6	Gravelly ashy sandy loam	SM	A-1	0-15	0-20	65-80	60-75	35-65	15-35	20-30	NP-5
	6-14	Gravelly clay, gravelly clay loam	SC	A-7	0-10	0-10	65-80	60-75	45-65	30-50	30-50	15-25
	14-26	Clay	CH	A-7	0	0-5	90-100	75-100	65-95	55-90	45-55	20-30
	26-60	Very cobble clay loam, very gravelly clay	SC, GC	A-2	0-10	10-50	40-70	30-60	25-55	15-40	35-50	15-25
730: Burchflat-----	0-9	Very gravelly sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	9-21	Extremely gravelly loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-45	10-30	5-25	0-20	30-35	10-15
	21-36	Extremely gravelly sandy clay loam, extremely cobble loam, extremely gravelly loam	GC, GP-GM	A-2	10-30	20-60	25-65	15-55	5-35	0-25	25-35	5-10
	36-46	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct 0-10	Pct 0-10						
Loope-----	In 0-1	Very gravelly sandy loam	GM, SM	A-1	Pct 0-10	Pct 0-10	55-70	35-50	25-40	20-30	Pct 20-30	NP-5
	1-14	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-45	10-30	5-25	0-20	30-35	10-15
	14-24	Bedrock			---	---	---	---	---	---	---	---
731: Burchflat-----	0-9	Very gravelly sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	9-21	Extremely gravelly loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-45	10-30	5-25	0-20	30-35	10-15
	21-36	Extremely gravelly sandy clay loam, extremely cobbly loam, extremely gravelly loam	GC, GP-GM	A-2	10-30	20-60	25-65	15-55	5-35	0-25	25-35	5-10
	36-46	Bedrock			---	---	---	---	---	---	---	---
Celeridge-----	0-3	Extremely bouldery sandy loam	GM, GP-GM	A-1	40-60	0-20	35-55	20-45	15-35	5-25	20-30	NP-5
	3-8	Extremely gravelly sandy loam	GM, GP-GM	A-1	0-20	10-20	20-35	15-25	10-20	5-15	20-30	NP-5
	8-19	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-35	15-25	5-15	0-10	30-35	10-15
	19-29	Bedrock			---	---	---	---	---	---	---	---
Loope-----	0-1	Very gravelly sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	1-14	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW-GC	A-2	0-10	5-20	25-45	10-30	5-25	0-20	30-35	10-15
	14-24	Bedrock			---	---	---	---	---	---	---	---
740: Jackflat-----	0-6	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-15	50-65	35-50	20-40	10-30	20-30	NP-5
	6-14	Very gravelly sandy loam, very gravelly sandy clay loam	SC	A-2	0-10	5-20	45-60	30-45	15-35	10-20	30-35	10-15
	14-45	Extremely cobbly sandy clay loam, very stony sandy clay loam	SC	A-2	15-30	15-30	45-80	30-65	20-55	10-35	30-35	10-15
	45-55	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

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TABLE 23.--Engineering Properties

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TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
790: Dab-----	0-3	Extremely gravelly sandy loam	GW, GP	A-1	0-5	0-5	30-50	10-25	5-15	0-5	20-25	NP-10
	3-10	Extremely gravelly sandy loam	GW, GP	A-1	0-5	0-5	30-50	10-25	5-15	0-5	20-25	NP-10
	10-24	Extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW, GW-GC, GW-GM, GP-GC	A-2	0-5	0-5	30-50	10-25	5-15	0-10	25-35	5-10
	24-60	Extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW, GW-GC, GW-GM, GP-GC	A-2	0-5	0-5	30-50	10-25	5-15	0-10	25-35	5-10
Dab-----	0-3	Extremely gravelly sandy loam	GW, GP	A-1	0-5	0-5	30-50	10-25	5-15	0-5	20-25	NP-10
	3-10	Extremely gravelly sandy loam	GW, GP	A-1	0-5	0-5	30-50	10-25	5-15	0-5	20-25	NP-10
	10-24	Extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW, GW-GC, GW-GM, GP-GC	A-2	0-5	0-5	30-50	10-25	5-15	0-10	25-35	5-10
	24-60	Extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW, GW-GC, GW-GM, GP-GC	A-2	0-5	0-5	30-50	10-25	5-15	0-10	25-35	5-10
791: Dab-----	0-3	Extremely gravelly sandy loam	GW, GP	A-1	0-5	0-5	30-50	10-25	5-15	0-5	20-25	NP-10
	3-12	Extremely gravelly sandy loam	GW, GP	A-1	0-5	0-5	30-50	10-25	5-15	0-5	20-25	NP-10
	12-24	Extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW, GW-GC, GW-GM, GP-GC	A-2	0-5	0-5	30-50	10-25	5-15	0-10	25-35	5-10
	24-60	Extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW, GW-GC, GW-GM, GP-GC	A-2	0-5	0-5	30-50	10-25	5-15	0-10	25-35	5-10

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
					>10 inches	3-10 inches	4	10	40	200		
			Unified	AASHTO								
	In				Pct	Pct					Pct	
Longday-----	0-5	Extremely gravelly fine sandy loam	GM, GW-GM	A-1	0-10	0-15	30-40	15-25	10-20	5-15	20-30	NP-5
	5-13	Extremely gravelly loam, extremely gravelly sandy clay loam, extremely gravelly sandy loam	GW-GC	A-2	0-10	10-20	25-45	10-30	5-25	0-20	30-35	10-15
	13-60	Extremely gravelly loam, extremely gravelly sandy clay loam, extremely gravelly sandy loam	GW-GC	A-2	0-10	10-30	25-40	10-30	5-25	0-20	30-35	10-15
Thiefbridge-----	0-1	Very stony slightly decomposed plant material	GP	A-1	20-40	10-30	---	---	---	---	---	---
	1-4	Very cobbly fine sandy loam	GM	A-2, A-4	0-5	25-50	55-80	50-75	35-60	25-50	15-25	NP-5
	4-8	Extremely cobbly sandy loam	GP-GM, GM	A-1	0-5	40-60	40-60	30-50	20-40	5-35	15-25	NP-5
	8-12	Extremely cobbly sandy loam	GM, GP-GM	A-1	0-5	40-60	40-60	30-50	20-40	5-35	15-25	NP-5
	12-17	Very cobbly sandy loam, very gravelly sandy clay loam	GC	A-2	0	20-45	45-70	40-65	30-55	15-35	25-35	10-20
	17-27	Bedrock			---	---	---	---	---	---	---	---
792: Dab-----	0-3	Extremely gravelly sandy loam	GW, GP	A-1	0-5	0-5	30-50	10-25	5-15	0-5	20-25	NP-10
	3-10	Extremely gravelly sandy loam	GW, GP	A-1	0-5	0-5	30-50	10-25	5-15	0-5	20-25	NP-10
	10-24	Extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW, GW-GC, GW-GM, GP-GC	A-2	0-5	0-5	30-50	10-25	5-15	0-10	25-35	5-10
	24-60	Extremely gravelly sandy loam, extremely gravelly sandy clay loam	GW, GW-GC, GW-GM, GP-GC	A-2	0-5	0-5	30-50	10-25	5-15	0-10	25-35	5-10
Aspocket-----	0-13	Gravelly sandy loam	SM	A-1	5-15	0-10	65-85	50-75	35-65	15-35	20-30	NP-5
	13-38	Very stony loam, very stony clay loam	CL, GC, SC	A-6	35-45	0-10	60-85	50-75	40-65	35-60	30-40	10-15
	38-54	Gravelly clay loam, very gravelly clay loam, very gravelly loam	SC, GC	A-6	0-10	0-10	45-75	35-65	30-60	20-45	30-40	10-15
	54-64	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In				Pct	Pct					Pct	
Hawkridge-----	0-1	Very stony sandy loam	GM, SM	A-2	20-35	10-20	55-70	50-65	40-55	25-35	20-30	NP-5
	1-7	Very gravelly sandy loam	GM	A-1, A-2	0-10	5-20	30-55	25-50	20-40	10-30	20-30	NP-5
	7-14	Very gravelly loam, extremely gravelly coarse sandy loam, very gravelly sandy clay loam	GC, GP-GC	A-2	0-10	5-20	25-45	20-40	10-30	5-20	30-35	10-15
	14-24	Bedrock			---	---	---	---	---	---	---	---
800: Grandridge-----	0-1	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	60-80	35-50	20-40	10-30	20-30	NP-5
	1-10	Very gravelly loam, very gravelly sandy clay loam	SC	A-2	0-10	0-10	70-80	30-45	15-35	10-20	30-35	10-15
	10-18	Very gravelly loam, very gravelly sandy clay loam	SC	A-2	0-10	0-10	70-80	30-45	15-35	10-20	30-35	10-15
	18-28	Bedrock			---	---	---	---	---	---	---	---
Delhew-----	0-16	Very gravelly loamy coarse sand	SP-SM	A-1	1-5	1-5	60-80	30-50	10-25	5-10	15-20	NP-5
	16-27	Very gravelly coarse sandy loam	SM	A-1	0-5	0-5	60-80	30-45	15-30	10-20	20-25	NP-5
	27-40	Extremely gravelly coarse sandy loam	SP	A-1	0-5	0-5	50-70	10-25	5-10	0-5	20-25	NP-5
	40-60	Extremely gravelly coarse sandy loam	SP	A-1	0-5	0-5	50-70	10-25	5-10	0-5	15-20	NP-5
801: Grandridge-----	0-1	Very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	0-10	60-80	35-50	20-40	10-30	20-30	NP-5
	1-10	Very gravelly loam, very gravelly sandy clay loam	SC	A-2	0-10	0-10	70-80	30-45	15-35	10-20	30-35	10-15
	10-18	Very gravelly loam, very gravelly sandy clay loam	SC	A-2	0-10	0-10	70-80	30-45	15-35	10-20	30-35	10-15
	18-28	Bedrock			---	---	---	---	---	---	---	---
Delhew-----	0-16	Very gravelly loamy coarse sand	SP-SM	A-1	1-5	1-5	60-80	30-50	10-25	5-10	15-20	NP-5
	16-27	Very gravelly coarse sandy loam	SM	A-1	0-5	0-5	60-80	30-45	15-30	10-20	20-25	NP-5
	27-40	Extremely gravelly coarse sandy loam	SP	A-1	0-5	0-5	50-70	10-25	5-10	0-5	20-25	NP-5
	40-60	Extremely gravelly coarse sandy loam	SP	A-1	0-5	0-5	50-70	10-25	5-10	0-5	15-20	NP-5

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In				Pct	Pct					Pct	
Bullville-----	0-10	Very gravelly coarse sandy loam	SP-SM	A-1	5-25	0-15	70-80	30-55	15-30	5-10	20-25	NP-5
	10-15	Extremely gravelly sandy clay loam, very gravelly coarse sandy loam	SP-SC	A-2	0-8	0-10	40-65	20-45	5-30	0-10	25-30	5-10
	15-30	Extremely gravelly sandy clay loam, very gravelly coarse sandy loam, very gravelly sandy clay loam	SP-SC	A-2	0-8	0-10	40-65	20-45	5-30	0-10	25-30	5-10
	30-40	Bedrock			---	---	---	---	---	---	---	---
810: Corbett-----	0-9	Very bouldery loamy coarse sand	SM, SP-SM	A-1	25-50	5-10	65-85	50-75	25-40	5-20	---	NP
	9-23	Gravelly loamy coarse sand, sand, gravelly loamy sand	SM, SP-SM	A-1	0	0-10	70-95	55-90	30-50	5-20	---	NP
	23-33	Bedrock			---	---	---	---	---	---	---	---
Toiyabe-----	0-9	Very bouldery loamy coarse sand	SM, SP-SM	A-1	25-50	8-18	65-85	50-75	25-40	5-20	---	NP
	9-16	Loamy coarse sand, gravelly loamy coarse sand, coarse sand	SM, SP-SM	A-1	0-5	0-10	70-100	60-85	20-50	5-20	---	NP
	16-26	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
820: Freelpeak-----	0-2	Gravel	SP	A-1-a	0-15	20-40	55-65	0-10	0-5	0	0-0	NP
	2-4	Extremely gravelly coarse sand, very gravelly sand, extremely gravelly loamy coarse sand	SP, GP-GM	A-1-a	0-35	5-35	50-60	10-35	5-30	0-10	0-14	NP
	4-8	Very gravelly sand, very gravelly loamy coarse sand, extremely gravelly coarse sand	SP-SM, SW-SM	A-1-b	0	5-30	45-75	25-55	15-45	5-20	0-14	NP
	8-36	Very cobbly loamy fine sand, very gravelly sand, very gravelly coarse sand, very cobbly loamy coarse sand	SM	A-1	10-30	25-35	55-75	40-55	25-40	10-25	0-14	NP
	36-46	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Windyridge-----	0-2	Very gravelly loamy coarse sand	SP-SM, SM	A-1	5-10	5-10	55-75	35-55	25-40	5-20	---	NP
	2-10	Very gravelly loamy coarse sand, very gravelly coarse sand	SM, SW-SM	A-1	0-10	0-10	50-75	25-50	15-30	5-15	---	NP
	10-20	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
830: Windyridge-----	0-2	Very gravelly loamy coarse sand	SM, SP-SM	A-1	5-10	5-10	55-75	35-55	25-40	5-20	---	NP
	2-10	Very gravelly loamy coarse sand, very gravelly coarse sand	SM, SW-SM	A-1	0-10	0-10	50-75	25-50	15-30	5-15	---	NP
	10-20	Bedrock			---	---	---	---	---	---	---	---
Freelpeak-----	0-2	Gravel	SP	A-1-a	0-15	20-40	55-65	0-10	0-5	0	0-0	NP
	2-4	Extremely gravelly coarse sand, very gravelly sand, extremely gravelly loamy coarse sand	SP, GP-GM	A-1-a	0-35	5-35	50-60	10-35	5-30	0-10	0-14	NP
	4-8	Very gravelly sand, very gravelly loamy coarse sand, extremely gravelly coarse sand	SP-SM, SW-SM	A-1-b	0	5-30	45-75	25-55	15-45	5-20	0-14	NP
	8-36	Very cobbly loamy fine sand, very gravelly sand, very gravelly coarse sand, very cobbly loamy coarse sand	SM	A-1	10-30	25-35	55-75	40-55	25-40	10-25	0-14	NP
	36-46	Bedrock			---	---	---	---	---	---	---	---
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840: Lavaspring-----	0-7	Mucky ashy loam	ML	A-4	0	0	85-100	75-100	65-95	60-75	30-40	NP-5
	7-31	Stratified extremely gravelly loamy coarse sand to clay loam	SC	A-2	0	0-10	60-85	50-75	35-55	15-35	30-40	10-15
	31-60	Stratified extremely gravelly coarse sandy loam to gravelly sandy loam	GM	A-1	0-10	0-10	45-60	35-50	25-40	15-30	20-30	NP-5

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Trespass-----	0-2	Gravelly ashy loam	SM	A-2	0-8	0-10	65-85	50-75	35-65	25-40	20-40	NP-5
	2-12	Very gravelly ashy loam, very gravelly ashy sandy clay loam, very gravelly ashy sandy loam	GC	A-2	0-8	0-10	35-55	25-45	20-40	15-35	30-40	10-15
	12-35	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	0-10	35-55	30-50	25-45	20-40	30-35	10-15
	35-54	Very gravelly loam, very gravelly sandy clay loam	GC	A-2, A-6	0-10	0-10	35-55	30-50	25-45	20-40	30-35	10-15
	54-60	Extremely gravelly coarse sandy loam, extremely gravelly sandy loam	GP-GM	A-1	0-5	0-20	40-55	15-25	10-20	5-15	20-30	NP-5
Lavaspring-----	0-7	Mucky ashy loam	ML	A-4	0	0	85-100	75-100	65-95	60-75	30-40	NP-5
	7-31	Stratified extremely gravelly loamy coarse sand to clay loam	SC	A-2	0	0-10	60-85	50-75	35-55	15-35	30-40	10-15
	31-60	Stratified extremely gravelly coarse sandy loam to gravelly sandy loam	GM	A-1	0-10	0-10	45-60	35-50	25-40	15-30	20-30	NP-5
850: Lunder-----	0-7	Very gravelly sandy loam	GM, SM	A-1	0-10	0-15	55-70	35-50	25-40	20-30	20-30	NP-5
	7-17	Cobbly clay	CH	A-7	0-5	10-30	75-95	70-90	60-75	55-70	55-70	30-40
	17-33	Cemented material			---	---	---	---	---	---	---	---
	33-60	Extremely cobbly sandy loam	GM, GW-GM	A-1	0-15	30-65	40-55	30-45	20-35	5-20	---	NP
851: Lunder-----	0-7	Very gravelly sandy loam	GM, SM	A-1	0-10	0-15	55-70	35-50	25-40	20-30	20-30	NP-5
	7-17	Cobbly clay	CH	A-7	0-5	10-30	75-95	70-90	60-75	55-70	55-70	30-40
	17-33	Cemented material			---	---	---	---	---	---	---	---
	33-60	Extremely cobbly sandy loam	GM, GW-GM	A-1	0-15	30-65	40-55	30-45	20-35	5-20	---	NP
Leviathan-----	0-10	Very gravelly sandy loam	GM, SM	A-1	0-10	0-15	55-70	35-50	25-40	20-30	20-30	NP-5
	10-60	Very gravelly clay loam, very gravelly sandy clay loam	GC, SC	A-2	0	10-20	50-70	40-50	35-45	15-25	35-45	15-25

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In				Pct	Pct					Pct	
860: Hardnut-----	0-3	Very gravelly ashy sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	3-8	Extremely gravelly ashy loam, extremely gravelly ashy sandy clay loam	GP-GC	A-2	0-10	0-10	25-45	10-30	5-20	0-15	30-35	10-15
	8-15	Extremely gravelly ashy sandy clay loam, extremely gravelly ashy clay loam	GC	A-2	0	0-10	25-45	10-30	10-25	5-20	30-40	10-20
	15-25	Bedrock			---	---	---	---	---	---	---	---
Ocashe-----	0-3	Extremely gravelly ashy sandy loam	GP-GM	A-1	0-10	5-20	25-45	15-35	10-20	5-15	20-30	NP-5
	3-7	Extremely gravelly ashy loam, extremely gravelly ashy sandy clay loam, extremely gravelly ashy sandy loam	GP-GC	A-2	0-10	0-10	25-45	10-30	5-20	0-15	30-35	10-15
	7-13	Extremely gravelly ashy loam, extremely gravelly ashy sandy clay loam, extremely gravelly ashy sandy loam	GP-GC	A-2	0-10	0-10	25-45	10-30	5-20	0-15	30-35	10-15
	13-23	Bedrock			---	---	---	---	---	---	---	---
870: Epvip-----	0-4	Very gravelly ashy sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	4-16	Very gravelly ashy sandy clay loam, very gravelly ashy clay loam, very gravelly ashy loam	GC	A-2	0	0-10	45-65	35-50	20-40	15-35	30-40	10-20
	16-26	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Domehill-----	0-2	Very gravelly ashy sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	2-8	Very gravelly ashy loam, very gravelly ashy sandy clay loam, very gravelly ashy sandy loam	GC	A-2, A-6	0-8	0-10	35-55	30-50	25-45	20-40	30-40	10-15
	8-13	Very gravelly ashy loam, very gravelly ashy sandy clay loam, very gravelly ashy clay loam	GM	A-2, A-6	0-8	0-10	35-55	30-50	25-45	20-40	30-45	10-15
	13-23	Bedrock			---	---	---	---	---	---	---	---
Ashflat-----	0-7	Gravelly ashy sandy loam	SM	A-1	0-5	0-10	65-85	50-75	35-65	15-35	20-40	NP-5
	7-43	Very gravelly ashy loam, very gravelly ashy sandy clay loam	GM	A-2	0-5	0-10	35-55	30-50	25-45	20-40	30-45	10-15
	43-60	Very gravelly ashy clay loam, very gravelly ashy loam	GC	A-2	0	0-10	45-65	35-50	20-40	15-35	30-40	10-20
871: Halfash-----	0-3	Very gravelly ashy sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	3-8	Very gravelly ashy loam	GC	A-2, A-6	0-8	0-10	35-55	30-50	25-45	20-40	30-40	10-15
	8-17	Very gravelly ashy sandy clay loam, very gravelly ashy clay loam, very gravelly ashy loam	GC	A-2	0	0-10	45-65	35-50	20-40	15-35	30-40	10-20
	17-27	Bedrock			---	---	---	---	---	---	---	---
Domehill-----	0-2	Very gravelly ashy sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	2-8	Very gravelly ashy loam, very gravelly ashy sandy clay loam, very gravelly ashy sandy loam	GC	A-2, A-6	0-8	0-10	35-55	30-50	25-45	20-40	30-40	10-15
	8-13	Very gravelly ashy loam, very gravelly ashy sandy clay loam, very gravelly ashy clay loam	GM	A-2, A-6	0-8	0-10	35-55	30-50	25-45	20-40	30-45	10-15
	13-23	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
872: Epvip-----	0-4	Very gravelly ashy sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	4-16	Very gravelly ashy sandy clay loam, very gravelly ashy clay loam, very gravelly ashy loam	GC	A-2	0	0-10	45-65	35-50	20-40	15-35	30-40	10-20
	16-26	Bedrock			---	---	---	---	---	---	---	---
Vetash-----	0-9	Very gravelly ashy sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	9-30	Very gravelly ashy loam, very gravelly ashy sandy clay loam, very gravelly ashy sandy loam	GC	A-2, A-6	0-8	0-10	35-55	30-50	25-45	20-40	30-40	10-15
	30-46	Very gravelly ashy loam, very gravelly ashy sandy clay loam	GC	A-2, A-6	0-8	0-10	35-55	30-50	25-45	20-40	30-40	10-15
	46-60	Very gravelly sandy loam	GM, SM	A-2	0-8	0-8	55-70	40-55	30-45	25-35	20-30	NP-5
Epvip-----	0-4	Very gravelly ashy sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	4-16	Very gravelly ashy sandy clay loam, very gravelly ashy clay loam, very gravelly ashy loam	GC	A-2	0	0-10	45-65	35-50	20-40	15-35	30-40	10-20
	16-26	Bedrock			---	---	---	---	---	---	---	---
873: Epvip-----	0-4	Very gravelly ashy sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	4-16	Very gravelly ashy sandy clay loam, very gravelly ashy clay loam, very gravelly ashy loam	GC	A-2	0	0-10	45-65	35-50	20-40	15-35	30-40	10-20
	16-26	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Hardnut-----	0-3	Very gravelly ashy sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	3-8	Extremely gravelly ashy loam, extremely gravelly ashy sandy clay loam	GP-GC	A-2	0-10	0-10	25-45	10-30	5-20	0-15	30-35	10-15
	8-15	Extremely gravelly ashy sandy clay loam, extremely gravelly ashy clay loam	GC	A-2	0	0-10	25-45	10-30	10-25	5-20	30-40	10-20
	15-25	Bedrock			---	---	---	---	---	---	---	---
Vetash-----	0-9	Very gravelly ashy sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	9-30	Very gravelly ashy loam, very gravelly ashy sandy clay loam, very gravelly ashy sandy loam	GC	A-2, A-6	0-8	0-10	35-55	30-50	25-45	20-40	30-40	10-15
	30-46	Very gravelly ashy loam, very gravelly ashy sandy clay loam	GC	A-2, A-6	0-8	0-10	35-55	30-50	25-45	20-40	30-40	10-15
	46-60	Very gravelly sandy loam	GM, SM	A-2	0-8	0-8	55-70	40-55	30-45	25-35	20-30	NP-5
880: Mopana-----	0-5	Very gravelly ashy fine sandy loam	GM, SM	A-1	0-6	0-20	55-70	35-50	25-40	10-25	20-30	NP-5
	5-9	Gravelly ashy loam	SC-SM	A-4, A-6	0	0-10	65-85	50-70	35-55	20-40	25-35	5-15
	9-19	Gravelly clay loam, clay	CH, CL, GC, SC	A-7	0	0-10	70-100	60-100	55-85	45-75	40-55	20-30
	19-60	Cemented material			---	---	---	---	---	---	---	---
890: Masonic-----	0-4	Very gravelly ashy fine sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	4-7	Very gravelly ashy loam, very gravelly ashy sandy loam	GC	A-2, A-6	0-10	0-10	35-55	30-50	25-45	20-40	30-40	10-15
	7-10	Extremely gravelly ashy sandy clay loam, extremely gravelly ashy clay loam	GC	A-2	0	0-20	25-40	10-25	10-20	5-20	30-40	10-20
	10-21	Extremely cobblely clay loam, extremely gravelly loam	GC	A-2	0-10	35-45	25-40	20-35	10-25	5-20	30-40	10-20
	21-31	Bedrock			---	---	---	---	---	---	---	---

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Epvip-----	0-4	Very gravelly ashy sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	4-16	Very gravelly ashy sandy clay loam, very gravelly ashy clay loam, very gravelly ashy loam	GC	A-2	0	0-10	45-65	35-50	20-40	15-35	30-40	10-20
	16-26	Bedrock			---	---	---	---	---	---	---	---
Domehill-----	0-2	Very gravelly ashy sandy loam	GM, SM	A-1	0-10	0-10	55-70	35-50	25-40	20-30	20-30	NP-5
	2-8	Very gravelly ashy loam, very gravelly ashy sandy clay loam, very gravelly ashy sandy loam	GC	A-2, A-6	0-8	0-10	35-55	30-50	25-45	20-40	30-40	10-15
	8-13	Very gravelly ashy loam, very gravelly ashy sandy clay loam, very gravelly ashy clay loam	GM	A-2, A-6	0-8	0-10	35-55	30-50	25-45	20-40	30-45	10-15
	13-23	Bedrock			---	---	---	---	---	---	---	---
900: Brokenhoe-----	0-6	Very cobbly ashy sandy loam	GM, SM	A-2	0-5	25-50	55-80	50-75	35-60	25-50	15-25	NP-5
	6-10	Very gravelly ashy sandy clay loam, extremely stony ashy sandy loam, very cobbly ashy sandy loam	GC	A-2	5-35	10-55	35-60	30-55	20-35	15-30	30-40	10-15
	10-20	Very cobbly clay loam, very cobbly clay, extremely stony clay loam			5-30	10-55	35-60	30-55	25-45	20-40	55-70	30-40
	20-37	Cemented material			---	---	---	---	---	---	---	---
	37-60	Cemented extremely stony sandy loam, cemented very stony sandy loam, cemented extremely cobbly sandy loam			15-50	10-55	35-60	30-55	20-40	10-15	15-25	NP-5

TABLE 23.--Engineering Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Fisherdig-----	0-5	Very gravelly ashy sandy loam	GM	A-1	0-10	10-25	45-60	35-50	25-40	20-30	20-30	NP-5
	5-8	Very gravelly ashy clay loam, very gravelly ashy sandy clay loam, very cobbly ashy sandy loam	GC	A-2, A-6	0-10	10-30	35-55	30-50	25-45	20-40	30-40	10-15
	8-19	Very cobbly clay, very gravelly clay loam, very gravelly clay, very cobbly clay loam	SC, GC	A-2	0-10	10-40	50-70	40-60	30-50	20-40	35-50	15-25
	19-46	Cemented material			---	---	---	---	---	---	---	---
	46-60	Cemented extremely gravelly sandy loam, cemented very gravelly sandy loam			0-15	10-30	25-45	15-35	15-30	10-25	15-25	NP-5
910: Indian Creek----	0-1	Very gravelly fine sandy loam	GC-GM, GC	A-2	0	0-5	40-60	35-50	25-40	20-30	20-30	5-10
	1-3	Gravelly loam, gravelly clay loam, sandy clay loam, loam	SC	A-6	0	0-8	75-100	60-85	50-60	40-55	30-40	10-20
	3-20	Gravelly clay, clay, sandy clay	CH, CL	A-7	0	0-8	80-100	60-90	55-80	50-80	45-60	25-40
	20-25	Cemented material			---	---	---	---	---	---	---	---
	25-60	Stratified extremely gravelly loamy coarse sand to gravelly sandy clay loam	GC-GM, GM, GP-GC	A-1, A-2	0-8	5-30	35-55	30-55	15-25	5-15	15-30	NP-10
Haybourne-----	0-5	Gravelly sandy loam	SM	A-1	0	0	60-90	50-75	35-50	20-30	0-14	NP
	5-20	Sandy loam, gravelly sandy loam, fine sandy loam	SM	A-2	0	0	70-90	65-85	50-60	25-35	0-14	NP
	20-60	Stratified gravelly coarse sand to fine sandy loam	SM	A-1, A-2	0	0	70-85	65-80	40-55	15-30	0-14	NP
920: Aquic Torrifluvents--	0-6	Extremely stony fine sandy loam	SM	A-1	25-50	5-25	50-65	35-50	25-35	10-20	---	NP
	6-60	Stratified very cobbly fine sandy loam to extremely stony coarse sand	GW-GM, SW-SM	A-1	25-40	30-45	50-70	35-55	25-45	5-30	---	NP

TABLE 23.--Engineering Properties

[illegible]

TABLE 24.-- Physical Properties of the Soils

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
100:							
Lithnip-----	0-2	10-18	1.25-1.35	14.00-42.00	0.03-0.06	0.0-2.9	1.0-2.0
	2-5	12-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	0.5-1.0
	5-15	---	---	0.00-0.01	---	---	---
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
101:							
Lithnip, moist-----	0-1	10-18	1.25-1.35	14.00-42.00	0.03-0.06	0.0-2.9	1.0-2.0
	1-5	12-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	0.5-1.0
	5-15	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
Fishsnooze-----	0-1	10-18	1.20-1.25	14.00-42.00	0.09-0.13	0.0-2.9	5.0-10
	1-9	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	5.0-10
	9-13	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	13-35	12-18	1.30-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.5-1.0
	35-45	---	---	0.00-0.01	---	---	---
102:							
Lithnip-----	0-1	10-18	1.25-1.35	14.00-42.00	0.03-0.06	0.0-2.9	1.0-2.0
	1-5	12-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	0.5-1.0
	5-15	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
Fishsnooze-----	0-1	10-18	1.20-1.25	14.00-42.00	0.09-0.13	0.0-2.9	5.0-10
	1-9	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	5.0-10
	9-13	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	13-35	12-18	1.30-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.5-1.0
	35-45	---	---	0.00-0.01	---	---	---
103:							
Lithnip-----	0-2	10-18	1.25-1.35	14.00-42.00	0.03-0.06	0.0-2.9	1.0-2.0
	2-5	12-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	0.5-1.0
	5-15	---	---	0.00-0.01	---	---	---
Meiss-----	0-6	15-25	0.85-1.00	14.00-42.00	0.12-0.15	0.0-2.9	8.0-15
	6-13	15-25	0.85-1.00	14.00-42.00	0.09-0.15	0.0-2.9	3.0-12
	13-23	---	---	0.00-0.00	---	---	---
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
110:							
Jobsis-----	0-5	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	5-9	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	9-17	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	17-20	4-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	20-30	---	---	0.10-10.00	---	---	---
Whittell-----	0-0	---	0.03-0.09	141.00-250.00	0.55-0.65	---	70-90
	0-7	4-8	1.60-1.70	42.34-141.14	0.02-0.04	0.0-1.0	1.0-3.0
	7-20	1-8	1.60-1.70	42.34-141.14	0.02-0.03	0.0-1.0	0.5-1.0
	20-32	1-8	1.60-1.70	42.34-141.14	0.02-0.02	0.0-1.0	0.0-5.0
	32-42	---	---	0.10-10.00	---	0.0-1.0	---
Rock Outcrop-----	---	---	---	---	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
111:							
Whittell-----	0-0	---	0.03-0.09	141.00-250.00	0.55-0.65	---	70-90
	0-7	4-8	1.60-1.70	42.34-141.14	0.02-0.04	0.0-1.0	1.0-3.0
	7-20	1-8	1.60-1.70	42.34-141.14	0.02-0.03	0.0-1.0	0.5-1.0
	20-32	1-8	1.60-1.70	42.34-141.14	0.02-0.02	0.0-1.0	0.0-5.0
	32-42	---	---	0.10-10.00	---	0.0-1.0	---
Jobsis-----	0-5	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	5-9	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	9-17	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	17-20	4-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	20-30	---	---	0.10-10.00	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
112:							
Jobsis-----	0-5	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	5-9	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	9-17	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	17-20	4-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	20-30	---	---	0.10-10.00	---	---	---
Whittell-----	0-0	---	0.03-0.09	141.00-250.00	0.55-0.65	---	70-90
	0-7	4-8	1.60-1.70	42.34-141.14	0.02-0.04	0.0-1.0	1.0-3.0
	7-20	1-8	1.60-1.70	42.34-141.14	0.02-0.03	0.0-1.0	0.5-1.0
	20-32	1-8	1.60-1.70	42.34-141.14	0.02-0.02	0.0-1.0	0.0-5.0
	32-42	---	---	0.10-10.00	---	0.0-1.0	---
Rock Outcrop-----	---	---	---	---	---	---	---
113:							
Whittell-----	0-0	---	0.03-0.09	141.00-250.00	0.55-0.65	---	70-90
	0-7	4-8	1.60-1.70	42.34-141.14	0.02-0.04	0.0-1.0	1.0-3.0
	7-20	1-8	1.60-1.70	42.34-141.14	0.02-0.03	0.0-1.0	0.5-1.0
	20-32	1-8	1.60-1.70	42.34-141.14	0.02-0.02	0.0-1.0	0.0-5.0
	32-42	---	---	0.10-10.00	---	0.0-1.0	---
Jobsis-----	0-5	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	5-9	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	9-17	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	17-20	4-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	20-30	---	---	0.10-10.00	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
120:							
Toiyabe-----	0-9	2-4	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-2.0
	9-16	2-4	1.45-1.65	42.00-141.00	0.06-0.08	0.0-2.9	0.0-0.5
	16-26	---	---	0.10-10.00	---	---	---
Corbett-----	0-9	2-4	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	9-23	0-5	1.60-1.70	42.00-141.00	0.05-0.07	0.0-2.9	0.5-1.0
	23-33	---	---	0.10-10.00	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
121:							
Toiyabe-----	0-9	2-4	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-2.0
	9-16	2-4	1.45-1.65	42.00-141.00	0.06-0.08	0.0-2.9	0.0-0.5
	16-26	---	---	0.10-10.00	---	---	---
Corbett-----	0-9	2-4	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	9-23	0-5	1.60-1.70	42.00-141.00	0.05-0.07	0.0-2.9	0.5-1.0
	23-33	---	---	0.10-10.00	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
122:							
Toiyabe-----	0-9	2-4	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-2.0
	9-16	2-4	1.45-1.65	42.00-141.00	0.06-0.08	0.0-2.9	0.0-0.5
	16-26	---	---	0.10-10.00	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
Corbett-----	0-9	2-4	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	9-23	0-5	1.60-1.70	42.00-141.00	0.05-0.07	0.0-2.9	0.5-1.0
	23-33	---	---	0.10-10.00	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
130:							
Sofgran-----	0-3	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	3-6	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	6-9	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	9-19	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	19-27	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	27-45	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	45-60	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
Klauspeak-----	0-5	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	5-16	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	16-22	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	1.0-2.0
	22-40	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	0.5-1.0
	40-60	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	0.2-0.5
Temo-----	0-10	2-8	1.55-1.70	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	10-16	2-8	1.55-1.75	42.00-141.00	0.05-0.07	0.0-2.9	0.0-0.5
	16-26	---	---	0.10-10.00	---	---	---
131:							
Sofgran-----	0-3	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	3-6	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	6-9	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	9-19	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	19-27	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	27-45	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	45-60	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
Temo-----	0-10	2-8	1.55-1.70	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	10-16	2-8	1.55-1.75	42.00-141.00	0.05-0.07	0.0-2.9	0.0-0.5
	16-26	---	---	0.10-10.00	---	---	---
Shalgran-----	0-3	2-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	2.0-4.0
	3-14	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	0.2-0.8
	14-24	---	---	0.10-10.00	---	---	---
132:							
Sofgran-----	0-3	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	3-6	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	6-9	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	9-19	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	19-27	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	27-45	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	45-60	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
Temo-----	0-10	2-8	1.55-1.70	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	10-16	2-8	1.55-1.75	42.00-141.00	0.05-0.07	0.0-2.9	0.0-0.5
	16-26	---	---	0.10-10.00	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
140:							
Temo-----	0-10	2-8	1.55-1.70	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	10-16	2-8	1.55-1.75	42.00-141.00	0.05-0.07	0.0-2.9	0.0-0.5
	16-26	---	---	0.10-10.00	---	---	---
Dagget-----	0-8	1-5	1.40-1.65	100.00-150.00	0.03-0.05	0.0-0.0	2.0-8.0
	8-41	1-5	1.50-1.70	100.00-150.00	0.03-0.05	0.0-0.0	1.0-3.0
	41-51	---	---	0.10-10.00	0.00-0.00	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
150:							
Mottskel-----	0-18	4-10	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	1.0-3.0
	18-60	2-10	1.45-1.65	141.00-705.00	0.05-0.07	0.0-2.9	0.2-0.6

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
160:							
Hopeval-----	0-5	10-18	0.80-1.00	4.00-14.00	0.20-0.24	0.0-2.9	12-24
	5-12	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	4.0-8.0
	12-15	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	3.0-5.0
	15-26	8-18	1.30-1.40	14.00-42.00	0.11-0.13	0.0-2.9	2.0-4.0
	26-33	8-18	1.35-1.45	14.00-42.00	0.09-0.11	0.0-2.9	0.5-1.0
	33-60	5-15	1.40-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.2-0.8
Hopeval-----	0-2	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	4.0-8.0
	2-12	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	4.0-8.0
	12-15	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	3.0-5.0
	15-26	8-18	1.30-1.40	14.00-42.00	0.11-0.13	0.0-2.9	2.0-4.0
	26-33	8-18	1.35-1.45	14.00-42.00	0.09-0.11	0.0-2.9	0.5-1.0
	33-60	5-15	1.40-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.2-0.8
162:							
Corralval-----	0-3	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	3-20	12-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	20-26	12-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	26-45	12-18	1.30-1.40	14.00-42.00	0.07-0.09	0.0-2.9	0.5-2.0
	45-60	3-8	1.40-1.50	42.00-141.00	0.05-0.07	0.0-2.9	0.2-0.8
Hopeval-----	0-2	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	4.0-8.0
	2-12	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	4.0-8.0
	12-15	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	3.0-5.0
	15-26	8-18	1.30-1.40	14.00-42.00	0.11-0.13	0.0-2.9	2.0-4.0
	26-33	8-18	1.35-1.45	14.00-42.00	0.09-0.11	0.0-2.9	0.5-1.0
	33-60	5-15	1.40-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.2-0.8
170:							
Burnlake-----	0-2	8-15	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	2.0-4.0
	2-17	8-15	1.35-1.55	14.00-42.00	0.04-0.08	0.0-2.9	2.0-4.0
	17-26	8-15	1.35-1.55	14.00-42.00	0.04-0.08	0.0-2.9	0.5-1.0
	26-60	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
Roadcat-----	0-8	3-10	1.35-1.55	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	8-19	8-12	1.35-1.55	42.00-141.00	0.04-0.08	0.0-2.9	0.5-1.0
	19-36	3-10	1.40-1.60	42.00-141.00	0.03-0.05	0.0-2.9	0.2-0.8
	36-60	3-10	1.40-1.60	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
171:							
Stumpatil-----	0-6	8-15	1.30-1.50	14.00-42.00	0.10-0.12	0.0-2.9	3.0-5.0
	6-11	8-15	1.35-1.55	14.00-42.00	0.06-0.08	0.0-2.9	2.0-3.0
	11-26	10-15	1.35-1.55	14.00-42.00	0.06-0.08	0.0-2.9	0.5-1.0
	26-33	13-18	1.35-1.55	14.00-42.00	0.06-0.08	0.0-2.9	0.2-0.8
	33-60	13-18	1.70-1.80	4.00-14.00	0.06-0.08	0.0-2.9	0.0-0.5
Morscour-----	0-2	12-18	1.30-1.50	14.00-42.00	0.10-0.12	0.0-2.9	2.0-4.0
	2-7	12-18	1.35-1.55	14.00-42.00	0.06-0.08	0.0-2.9	2.0-4.0
	7-14	---	---	0.42-141.00	---	---	---
	14-24	---	---	0.00-0.01	---	---	---
172:							
Stumpatil-----	0-6	8-15	1.30-1.50	14.00-42.00	0.10-0.12	0.0-2.9	3.0-5.0
	6-11	8-15	1.35-1.55	14.00-42.00	0.06-0.08	0.0-2.9	2.0-3.0
	11-26	10-15	1.35-1.55	14.00-42.00	0.06-0.08	0.0-2.9	0.5-1.0
	26-33	13-18	1.35-1.55	14.00-42.00	0.06-0.08	0.0-2.9	0.2-0.8
	33-60	13-18	1.70-1.80	4.00-14.00	0.06-0.08	0.0-2.9	0.0-0.5
173:							
Stumpatil-----	0-6	8-15	1.30-1.50	14.00-42.00	0.10-0.12	0.0-2.9	3.0-5.0
	6-11	8-15	1.35-1.55	14.00-42.00	0.06-0.08	0.0-2.9	2.0-3.0
	11-26	10-15	1.35-1.55	14.00-42.00	0.06-0.08	0.0-2.9	0.5-1.0
	26-33	13-18	1.35-1.55	14.00-42.00	0.06-0.08	0.0-2.9	0.2-0.8
	33-60	13-18	1.70-1.80	4.00-14.00	0.06-0.08	0.0-2.9	0.0-0.5

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
174:							
Stumpatil-----	0-6	8-15	1.30-1.50	14.00-42.00	0.10-0.12	0.0-2.9	3.0-5.0
	6-11	8-15	1.35-1.55	14.00-42.00	0.06-0.08	0.0-2.9	2.0-3.0
	11-26	10-15	1.35-1.55	14.00-42.00	0.06-0.08	0.0-2.9	0.5-1.0
	26-33	13-18	1.35-1.55	14.00-42.00	0.06-0.08	0.0-2.9	0.2-0.8
	33-60	13-18	1.70-1.80	4.00-14.00	0.06-0.08	0.0-2.9	0.0-0.5
Sonorapass-----	0-8	8-15	1.30-1.50	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	8-17	10-18	1.30-1.50	14.00-42.00	0.05-0.07	0.0-2.9	2.0-4.0
	17-21	10-18	1.30-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.5-1.0
	21-31	---	---	0.00-0.01	---	---	---
Snowtell-----	0-3	8-15	1.30-1.50	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	3-10	8-15	1.30-1.50	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	10-20	---	---	0.00-0.01	---	---	---
180:							
Shalgran-----	0-3	2-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	2.0-4.0
	3-14	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	0.2-0.8
	14-24	---	---	0.10-10.00	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
190:							
Hopeval-----	0-2	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	4.0-8.0
	2-12	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	4.0-8.0
	12-15	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	3.0-5.0
	15-26	8-18	1.30-1.40	14.00-42.00	0.11-0.13	0.0-2.9	2.0-4.0
	26-33	8-18	1.35-1.45	14.00-42.00	0.09-0.11	0.0-2.9	0.5-1.0
	33-60	5-15	1.40-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.2-0.8
Hopeval-----	0-5	10-18	0.80-1.00	4.00-14.00	0.20-0.24	0.0-2.9	12-24
	5-12	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	4.0-8.0
	12-15	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	3.0-5.0
	15-26	8-18	1.30-1.40	14.00-42.00	0.11-0.13	0.0-2.9	2.0-4.0
	26-33	8-18	1.35-1.45	14.00-42.00	0.09-0.11	0.0-2.9	0.5-1.0
	33-60	5-15	1.40-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.2-0.8
200:							
Cavebear-----	0-4	10-18	1.20-1.30	4.00-14.00	0.14-0.16	0.0-2.9	3.0-5.0
	4-20	10-18	1.25-1.35	14.00-42.00	0.12-0.14	0.0-2.9	3.0-5.0
	20-60	3-10	1.40-1.60	141.00-705.00	0.03-0.05	0.0-2.9	0.2-0.8
Hopeval-----	0-2	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	4.0-8.0
	2-12	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	4.0-8.0
	12-15	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	3.0-5.0
	15-26	8-18	1.30-1.40	14.00-42.00	0.11-0.13	0.0-2.9	2.0-4.0
	26-33	8-18	1.35-1.45	14.00-42.00	0.09-0.11	0.0-2.9	0.5-1.0
	33-60	5-15	1.40-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.2-0.8
Hopeval-----	0-5	10-18	0.80-1.00	4.00-14.00	0.20-0.24	0.0-2.9	12-24
	5-12	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	4.0-8.0
	12-15	10-18	1.25-1.35	4.00-14.00	0.17-0.21	0.0-2.9	3.0-5.0
	15-26	8-18	1.30-1.40	14.00-42.00	0.11-0.13	0.0-2.9	2.0-4.0
	26-33	8-18	1.35-1.45	14.00-42.00	0.09-0.11	0.0-2.9	0.5-1.0
	33-60	5-15	1.40-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.2-0.8
210:							
Waterpeak-----	0-5	2-8	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	2.0-5.0
	5-18	2-8	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	2.0-5.0
	18-27	4-8	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	1.0-3.0
	27-60	10-15	1.40-1.60	14.00-42.00	0.08-0.12	0.0-2.9	0.2-1.0
Rock Outcrop-----	---	---	---	---	---	---	---
211:							
Waterpeak-----	0-5	2-8	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	2.0-5.0
	5-18	2-8	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	2.0-5.0
	18-27	4-8	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	1.0-3.0
	27-60	10-15	1.40-1.60	14.00-42.00	0.08-0.12	0.0-2.9	0.2-1.0

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
Buggin-----	0-2	3-10	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	5.0-8.0
	2-7	3-10	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	3.0-6.0
	7-10	8-10	1.40-1.60	42.00-141.00	0.04-0.06	0.0-2.9	0.5-1.0
	10-16	---	---	0.10-10.00	---	---	---
	16-26	---	---	0.01-0.42	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
212:							
Waterpeak-----	0-5	2-8	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	2.0-5.0
	5-18	2-8	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	2.0-5.0
	18-27	4-8	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	1.0-3.0
	27-60	10-15	1.40-1.60	14.00-42.00	0.08-0.12	0.0-2.9	0.2-1.0
Sofgran-----	0-3	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	3-6	3-10	1.45-1.65	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	6-9	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	9-19	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	19-27	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	27-45	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	45-60	3-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
Temo-----	0-10	2-8	1.55-1.70	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	10-16	2-8	1.55-1.75	42.00-141.00	0.05-0.07	0.0-2.9	0.0-0.5
	16-26	---	---	0.10-10.00	---	---	---
220:							
Hardtil-----	0-3	2-8	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	3-7	8-15	1.40-1.60	42.00-141.00	0.06-0.08	0.0-2.9	2.0-4.0
	7-18	8-15	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	0.5-1.0
	18-28	---	---	0.00-0.01	---	---	---
Alpineco-----	0-3	10-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	2.0-4.0
	3-12	10-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	2.0-4.0
	12-22	10-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	0.5-1.0
	22-27	10-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	0.2-0.8
	27-49	12-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	0.0-0.5
	49-59	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
221:							
Hardtil-----	0-3	2-8	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	3-7	8-15	1.40-1.60	42.00-141.00	0.06-0.08	0.0-2.9	2.0-4.0
	7-18	8-15	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	0.5-1.0
	18-28	---	---	0.00-0.01	---	---	---
Alpineco-----	0-3	10-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	2.0-4.0
	3-12	10-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	2.0-4.0
	12-22	10-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	0.5-1.0
	22-27	10-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	0.2-0.8
	27-49	12-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	0.0-0.5
	49-59	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
222:							
Hardtil-----	0-3	2-8	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	3-7	8-15	1.40-1.60	42.00-141.00	0.06-0.08	0.0-2.9	2.0-4.0
	7-18	8-15	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	0.5-1.0
	18-28	---	---	0.00-0.01	---	---	---
Alpineco-----	0-3	10-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	2.0-4.0
	3-12	10-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	2.0-4.0
	12-22	10-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	0.5-1.0
	22-27	10-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	0.2-0.8
	27-49	12-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	0.0-0.5
	49-59	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
230:							
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
Thieftridge-----	0-1	---	0.40-0.80	42.00-141.00	0.20-0.30	---	50-90
	1-4	6-18	0.60-1.00	14.00-42.00	0.09-0.11	0.0-2.9	4.0-10
	4-8	6-18	1.00-1.20	14.00-42.00	0.09-0.11	0.0-2.9	4.0-10
	8-12	6-18	1.10-1.30	14.00-42.00	0.09-0.11	0.0-2.9	3.0-5.0
	12-17	18-25	1.15-1.35	14.00-42.00	0.10-0.12	0.0-2.9	2.0-4.0
	17-27	---	---	0.00-0.01	---	---	---
Angelwhine-----	0-15	10-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	2.0-4.0
	15-23	12-18	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	1.0-3.0
	23-43	18-25	1.35-1.50	4.00-14.00	0.10-0.14	0.0-2.9	0.5-1.0
	43-60	15-20	1.35-1.50	4.00-14.00	0.10-0.14	0.0-2.9	0.2-0.8
231:							
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
232:							
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
HawkrIDGE-----	0-1	10-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-7	10-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	7-14	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
233:							
Angelwhine-----	0-15	10-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	2.0-4.0
	15-23	12-18	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	1.0-3.0
	23-43	18-25	1.35-1.50	4.00-14.00	0.10-0.14	0.0-2.9	0.5-1.0
	43-60	15-20	1.35-1.50	4.00-14.00	0.10-0.14	0.0-2.9	0.2-0.8
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
HawkrIDGE-----	0-1	10-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-7	10-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	7-14	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
234:							
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
Thief ridge-----	0-1	---	0.40-0.80	42.00-141.00	0.20-0.30	---	50-90
	1-4	6-18	0.60-1.00	14.00-42.00	0.09-0.11	0.0-2.9	4.0-10
	4-8	6-18	1.00-1.20	14.00-42.00	0.09-0.11	0.0-2.9	4.0-10
	8-12	6-18	1.10-1.30	14.00-42.00	0.09-0.11	0.0-2.9	3.0-5.0
	12-17	18-25	1.15-1.35	14.00-42.00	0.10-0.12	0.0-2.9	2.0-4.0
	17-27	---	---	0.00-0.01	---	---	---
235: Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
Angelwhine-----	0-15	10-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	2.0-4.0
	15-23	12-18	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	1.0-3.0
	23-43	18-25	1.35-1.50	4.00-14.00	0.10-0.14	0.0-2.9	0.5-1.0
	43-60	15-20	1.35-1.50	4.00-14.00	0.10-0.14	0.0-2.9	0.2-0.8
240: Granylith-----	0-1	3-10	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	1-4	3-10	1.40-1.60	42.00-141.00	0.03-0.05	0.0-2.9	2.0-4.0
	4-12	3-10	1.40-1.60	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	12-15	3-10	1.40-1.60	42.00-141.00	0.03-0.05	0.0-2.9	0.2-0.8
	15-25	---	---	0.00-0.01	---	---	---
Hargran-----	0-1	---	0.03-0.09	141.00-250.00	0.55-0.65	---	70-90
	1-9	10-18	1.20-1.30	14.00-42.00	0.10-0.12	0.0-2.9	3.0-5.0
	9-24	10-18	1.25-1.35	14.00-42.00	0.10-0.12	0.0-2.9	2.0-4.0
	24-36	10-18	1.35-1.55	14.00-42.00	0.09-0.11	0.0-2.9	0.5-1.0
	36-39	10-18	1.35-1.55	14.00-42.00	0.09-0.11	0.0-2.9	0.2-0.8
	39-49	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
250: Florand-----	0-1	10-18	0.80-1.00	14.00-42.00	0.09-0.13	0.0-2.9	10-18
	1-4	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	5.0-10
	4-12	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	4.0-8.0
	12-18	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	18-28	12-20	1.30-1.50	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
	28-38	12-20	1.30-1.50	14.00-42.00	0.09-0.13	0.0-2.9	0.2-0.8
	38-47	12-20	1.35-1.55	14.00-42.00	0.09-0.13	0.0-2.9	0.0-0.5
	47-57	---	---	0.42-141.00	---	---	---
Lostridge-----	0-3	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	5.0-10
	3-11	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	11-23	12-18	1.30-1.50	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
	23-29	10-18	1.30-1.50	14.00-42.00	0.09-0.13	0.0-2.9	0.0-0.8
	29-39	---	---	0.42-141.00	---	---	---
Fishsnooze-----	0-1	10-18	0.80-1.00	14.00-42.00	0.09-0.13	0.0-2.9	10-18
	1-9	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	5.0-10
	9-13	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	13-35	12-18	1.30-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.5-1.0
	35-45	---	---	0.00-0.01	---	---	---
260: Hawkridge-----	0-1	10-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	2.0-4.0
	1-7	10-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	7-14	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
261: Hawkridge-----	0-1	10-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-7	10-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	7-14	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
Lithnip-----	0-1	10-18	1.25-1.35	14.00-42.00	0.03-0.06	0.0-2.9	1.0-2.0
	1-5	12-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	0.5-1.0
	5-15	---	---	0.00-0.01	---	---	---
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
262: Domehill-----	0-2	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	1.0-3.0
	2-8	18-25	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	1.0-3.0
	8-13	24-30	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	1.0-2.0
	13-23	---	---	0.00-0.01	---	---	---
Kiote-----	0-10	10-18	1.10-1.30	14.00-42.00	0.12-0.14	0.0-2.9	2.0-5.0
	10-17	10-18	1.10-1.30	4.00-14.00	0.11-0.13	0.0-2.9	1.0-3.0
	17-30	18-25	1.20-1.40	4.00-14.00	0.14-0.16	0.0-2.9	0.5-1.0
	30-60	10-25	1.40-1.55	14.00-42.00	0.06-0.08	0.0-2.9	0.5-1.0
270: Duco-----	0-3	10-20	1.35-1.50	4.00-14.00	0.07-0.08	0.0-2.9	1.0-2.0
	3-5	10-20	1.35-1.50	4.00-14.00	0.07-0.08	0.0-2.9	0.8-2.0
	5-18	27-35	1.40-1.60	1.40-4.00	0.08-0.10	3.0-5.9	0.5-2.0
	18-28	---	---	0.00-0.01	---	---	---
Smallcone-----	0-3	5-18	1.40-1.55	42.00-141.00	0.04-0.07	0.0-2.9	0.5-1.0
	3-6	5-18	1.40-1.55	42.00-141.00	0.04-0.07	0.0-2.9	0.5-1.0
	6-16	---	---	0.01-0.42	---	---	---
Cagle-----	0-4	27-35	1.05-1.30	1.40-4.00	0.16-0.17	3.0-5.9	2.0-3.0
	4-12	35-50	1.20-1.40	0.42-1.40	0.13-0.15	6.0-8.9	1.0-2.0
	12-28	35-50	1.20-1.40	0.42-1.40	0.13-0.15	6.0-8.9	0.0-2.0
	28-38	---	---	0.01-0.42	---	---	---
271: Duco-----	0-3	10-20	1.35-1.50	4.00-14.00	0.07-0.08	0.0-2.9	1.0-2.0
	3-5	10-20	1.35-1.50	4.00-14.00	0.07-0.09	0.0-2.9	0.8-2.0
	5-18	27-35	1.40-1.60	1.40-4.00	0.08-0.10	3.0-5.9	0.5-2.0
	18-28	---	---	0.00-0.01	---	---	---
Vetagrande-----	0-3	10-15	1.15-1.35	14.00-42.00	0.04-0.06	0.0-2.9	2.0-3.0
	3-9	10-15	1.15-1.35	14.00-42.00	0.04-0.06	0.0-2.9	2.0-3.0
	9-25	18-27	1.30-1.50	4.00-14.00	0.07-0.09	0.0-2.9	1.0-2.0
	25-60	18-27	1.40-1.55	1.40-4.00	0.07-0.09	0.0-2.9	0.5-0.8
Pinenut-----	0-1	10-15	1.15-1.35	14.00-42.00	0.06-0.08	0.0-2.9	1.0-3.0
	1-6	10-18	1.40-1.60	14.00-42.00	0.10-0.12	0.0-2.9	0.8-2.0
	6-19	18-27	1.25-1.45	1.40-4.00	0.08-0.10	0.0-2.9	0.8-2.0
	19-29	---	---	0.00-0.42	---	---	---
280: Longcreek-----	0-3	20-27	1.45-1.55	4.00-14.00	0.08-0.10	0.0-2.9	1.0-4.0
	3-6	35-40	1.30-1.50	0.42-1.40	0.08-0.10	0.0-2.9	1.0-2.0
	6-14	40-50	1.25-1.45	0.42-1.40	0.07-0.08	3.0-5.9	0.5-1.0
	14-24	---	---	0.00-0.01	---	---	---
Devada-----	0-4	15-27	1.10-1.30	4.00-14.00	0.08-0.10	3.0-5.9	1.0-3.0
	4-5	27-40	1.30-1.45	1.40-4.00	0.17-0.19	3.0-5.9	0.8-2.0
	5-13	40-60	1.20-1.40	0.42-1.40	0.14-0.16	6.0-8.9	0.8-2.0
	13-23	---	---	0.00-0.01	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
290:							
Pernty-----	0-5	18-25	1.10-1.25	4.00-14.00	0.09-0.12	0.0-2.9	2.0-3.0
	5-15	25-35	1.15-1.30	1.40-4.00	0.08-0.10	3.0-5.9	0.5-1.0
	15-25	---	---	0.00-0.01	---	---	---
Chen-----	0-7	18-27	1.10-1.25	4.00-14.00	0.08-0.12	0.0-2.9	2.0-3.0
	7-17	40-55	1.25-1.40	0.01-0.42	0.05-0.09	3.0-5.9	0.5-2.0
	17-27	---	---	0.00-0.01	---	---	---
310:							
Bagval-----	0-2	27-35	1.25-1.35	1.40-4.00	0.18-0.20	3.0-5.9	2.0-4.0
	2-9	45-60	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	2.0-4.0
	9-30	45-60	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	1.0-3.0
	30-60	45-60	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	1.0-2.0
Bagval-----	0-2	27-35	1.25-1.35	1.40-4.00	0.18-0.20	3.0-5.9	2.0-4.0
	2-9	45-60	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	2.0-4.0
	9-30	45-60	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	1.0-3.0
	30-60	45-60	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	1.0-2.0
Wetbag-----	0-2	18-27	0.80-1.00	4.00-14.00	0.25-0.50	3.0-5.9	10-15
	2-6	35-50	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	5.0-8.0
	6-15	35-50	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	2.0-4.0
	15-26	35-50	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	1.0-2.0
	26-46	35-50	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	1.0-2.0
	46-60	35-50	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	0.2-0.8
Wetbag-----	0-4	---	0.70-0.90	42.00-141.00	0.22-0.26	0.0-2.9	50-70
	4-6	35-50	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	5.0-8.0
	6-15	35-50	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	2.0-4.0
	15-26	35-50	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	1.0-2.0
	26-46	35-50	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	1.0-2.0
	46-60	35-50	1.25-1.35	0.01-0.42	0.15-0.18	6.0-8.9	0.2-0.8
320:							
Franktown-----	0-0	---	0.20-0.40	14.00-42.00	---	---	50-75
	0-5	5-10	1.30-1.50	14.00-42.00	0.06-0.08	0.0-2.9	1.0-3.0
	5-16	5-10	1.35-1.55	14.00-42.00	0.05-0.07	0.0-2.9	1.0-2.0
	16-26	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
330:							
Oest-----	0-4	8-18	1.30-1.50	14.00-42.00	0.07-0.10	0.0-2.9	1.0-2.0
	4-10	8-18	1.30-1.50	14.00-42.00	0.07-0.10	0.0-2.9	1.0-2.0
	10-60	18-25	1.40-1.60	4.00-14.00	0.07-0.10	0.0-2.9	0.5-1.0
340:							
Aspocket-----	0-13	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	13-38	18-27	1.30-1.40	4.00-14.00	0.09-0.13	0.0-2.9	2.0-4.0
	38-54	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	54-64	---	---	0.01-0.42	---	---	---
Aspocket-----	0-13	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	13-38	18-27	1.30-1.40	4.00-14.00	0.09-0.13	0.0-2.9	2.0-4.0
	38-54	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	54-64	---	---	0.01-0.42	---	---	---
350:							
Leroman-----	0-5	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	3.0-5.0
	5-23	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	23-34	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	0.5-1.0
	34-43	---	---	0.01-0.42	---	---	---
	43-53	---	---	0.00-0.01	---	---	---
Chenhigh-----	0-3	8-18	1.20-1.30	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	3-6	30-45	1.25-1.35	0.42-1.40	0.08-0.12	6.0-8.9	1.0-3.0
	6-10	35-50	1.25-1.35	0.42-1.40	0.07-0.11	6.0-8.9	1.0-3.0
	10-18	35-50	1.25-1.35	0.42-1.40	0.07-0.11	6.0-8.9	0.5-1.0
	18-28	---	---	0.00-0.01	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
Celeridge-----	0-3	8-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	3-8	8-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	8-19	18-27	1.25-1.35	4.00-14.00	0.09-0.10	0.0-2.9	3.0-5.0
	19-29	---	---	0.00-0.01	---	---	---
Dogbed-----	0-14	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	3.0-5.0
	14-50	18-27	1.30-1.40	4.00-14.00	0.10-0.12	0.0-2.9	1.0-3.0
	50-60	15-25	1.30-1.40	4.00-14.00	0.10-0.12	0.0-2.9	0.5-1.0
360: Monibasin-----	0-15	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	15-34	18-25	1.25-1.35	4.00-14.00	0.10-0.14	0.0-2.9	1.0-3.0
	34-60	18-25	1.25-1.35	4.00-14.00	0.10-0.14	0.0-2.9	0.5-1.0
Vermdig-----	0-2	10-18	1.25-1.35	4.00-14.00	0.16-0.18	0.0-2.9	1.0-3.0
	2-13	18-25	1.30-1.40	4.00-14.00	0.10-0.14	3.0-5.9	1.0-2.0
	13-32	18-27	1.30-1.40	4.00-14.00	0.10-0.14	3.0-5.9	0.5-1.0
	32-60	25-35	1.30-1.40	1.40-4.00	0.13-0.15	3.0-5.9	0.5-1.0
370: Celeridge-----	0-3	8-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	3-8	8-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	8-19	18-27	1.25-1.35	4.00-14.00	0.09-0.10	0.0-2.9	3.0-5.0
	19-29	---	---	0.00-0.01	---	---	---
Gerdog-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	3-11	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	11-21	---	---	0.00-0.01	---	---	---
Loope-----	0-1	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-14	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
Pinew-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	3-8	18-25	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-2.0
	8-15	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	15-25	---	---	0.01-0.42	---	---	---
380: Joecut-----	0-1	---	0.20-0.40	14.00-42.00	---	---	50-75
	1-2	10-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	3.0-8.0
	2-14	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	14-40	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	40-60	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
Celeridge-----	0-3	8-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	3-8	8-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	8-19	18-27	1.25-1.35	4.00-14.00	0.09-0.10	0.0-2.9	3.0-5.0
	19-29	---	---	0.00-0.01	---	---	---
Joecut-----	0-1	---	0.03-0.09	141.00-250.00	0.55-0.65	---	70-90
	1-2	10-18	0.80-1.00	14.00-42.00	0.09-0.13	0.0-2.9	10-18
	2-14	10-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	2.0-8.0
	14-40	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	40-60	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
Gerdog-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	3-11	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	11-21	---	---	0.00-0.01	---	---	---
381: Heenlake-----	0-6	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	6-18	25-30	1.30-1.40	1.40-4.00	0.19-0.21	3.0-5.9	1.0-3.0
	18-22	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	22-32	---	---	0.01-0.42	---	---	---
Loope-----	0-1	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-14	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
Joecut-----	0-2	10-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	3.0-8.0
	2-14	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	14-40	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	40-60	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
Joecut-----	0-1	---	0.03-0.09	141.00-250.00	0.55-0.65	---	70-90
	1-2	10-18	0.80-1.00	14.00-42.00	0.09-0.13	0.0-2.9	10-18
	2-14	10-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	2.0-8.0
	14-40	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	40-60	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
382: Joecut-----	0-2	10-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	3.0-8.0
	2-14	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	14-40	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	40-60	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
Joecut-----	0-1	---	0.03-0.09	141.00-250.00	0.55-0.65	---	70-90
	1-2	10-18	0.80-1.00	14.00-42.00	0.09-0.13	0.0-2.9	10-18
	2-14	10-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	2.0-8.0
	14-40	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	40-60	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
390: Heenlake-----	0-6	10-20	1.20-1.25	4.00-14.00	0.08-0.09	3.0-5.9	2.0-4.0
	6-18	25-30	1.30-1.40	1.40-4.00	0.19-0.21	3.0-5.9	1.0-3.0
	18-22	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	22-32	---	---	0.01-0.42	---	---	---
Loope-----	0-1	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-14	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
Chenhigh-----	0-3	8-18	1.20-1.30	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	3-6	30-45	1.25-1.35	0.42-1.40	0.08-0.12	6.0-8.9	1.0-3.0
	6-10	35-50	1.25-1.35	0.42-1.40	0.07-0.11	6.0-8.9	1.0-3.0
	10-18	35-50	1.25-1.35	0.42-1.40	0.07-0.11	6.0-8.9	0.5-1.0
	18-28	---	---	0.00-0.01	---	---	---
391: Heenlake-----	0-6	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	6-18	25-30	1.30-1.40	1.40-4.00	0.19-0.21	3.0-5.9	1.0-3.0
	18-22	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	22-32	---	---	0.01-0.42	---	---	---
Loope-----	0-1	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-14	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
Dogbed-----	0-14	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	3.0-5.0
	14-50	18-27	1.30-1.40	4.00-14.00	0.10-0.12	0.0-2.9	1.0-3.0
	50-60	15-25	1.30-1.40	4.00-14.00	0.10-0.12	0.0-2.9	0.5-1.0
392: Heenlake-----	0-6	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	6-18	25-30	1.30-1.40	1.40-4.00	0.19-0.21	3.0-5.9	1.0-3.0
	18-22	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	22-32	---	---	0.01-0.42	---	---	---
Loope-----	0-1	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-14	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
400: Pinew-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	3-8	18-25	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-2.0
	8-15	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	15-25	---	---	0.01-0.42	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
Carshal-----	0-2	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	1.0-3.0
	2-5	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	0.5-1.0
	5-14	---	---	0.01-0.42	---	---	---
	14-24	---	---	0.00-0.01	---	---	---
Loope-----	0-1	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-14	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
Celeridge-----	0-3	8-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	3-8	8-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	8-19	18-27	1.25-1.35	4.00-14.00	0.09-0.10	0.0-2.9	3.0-5.0
	19-29	---	---	0.00-0.01	---	---	---
401: Pinew-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	3-8	18-25	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-2.0
	8-15	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	15-25	---	---	0.01-0.42	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
410: Wolfcut-----	0-1	---	0.03-0.09	141.00-250.00	0.15-0.19	---	70-90
	1-4	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	4-11	18-25	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	0.5-1.0
	11-60	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	0.5-1.0
420: Buggin-----	0-2	3-10	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	5.0-8.0
	2-7	3-10	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	3.0-6.0
	7-10	8-10	1.40-1.60	42.00-141.00	0.04-0.06	0.0-2.9	0.5-1.0
	10-16	---	---	0.10-10.00	---	---	---
	16-26	---	---	0.01-0.42	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
430: Newcone-----	0-1	12-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	1.0-2.0
	1-6	12-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	0.5-1.0
	6-20	---	---	0.01-0.42	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
440: Dogbed-----	0-14	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	3.0-5.0
	14-50	18-27	1.30-1.40	4.00-14.00	0.10-0.12	0.0-2.9	1.0-3.0
	50-60	15-25	1.30-1.40	4.00-14.00	0.10-0.12	0.0-2.9	0.5-1.0
Celeridge-----	0-3	8-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	3-8	8-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	8-19	18-27	1.25-1.35	4.00-14.00	0.09-0.10	0.0-2.9	3.0-5.0
	19-29	---	---	0.00-0.01	---	---	---
Carshal-----	0-2	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	1.0-3.0
	2-5	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	0.5-1.0
	5-14	---	---	0.01-0.42	---	---	---
	14-24	---	---	0.00-0.01	---	---	---
Joecut-----	0-1	---	0.03-0.09	141.00-250.00	0.55-0.65	---	70-90
	1-2	10-18	0.80-1.00	14.00-42.00	0.09-0.13	0.0-2.9	10-18
	2-14	10-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	2.0-8.0
	14-40	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	40-60	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
450: Carshal-----	0-2	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	1.0-3.0
	2-5	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	0.5-1.0
	5-14	---	---	0.01-0.42	---	---	---
	14-24	---	---	0.00-0.01	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
Loope-----	0-1	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-14	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
460: Toejom-----	0-9	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	9-14	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	14-24	---	---	0.10-10.00	---	---	---
Pimogran-----	0-10	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	10-18	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	18-28	---	---	0.10-10.00	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
461: Toejom-----	0-9	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	9-14	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	14-24	---	---	0.10-10.00	---	---	---
Pimogran-----	0-10	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	10-18	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	18-28	---	---	0.10-10.00	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
462: Toejom-----	0-9	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	9-14	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	14-24	---	---	0.10-10.00	---	---	---
Glenbrook-----	0-5	0-8	1.35-1.55	42.00-141.00	0.05-0.07	0.0-2.9	0.4-0.9
	5-14	0-8	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	0.0-0.5
	14-24	---	---	0.10-10.00	---	---	---
Pimogran-----	0-10	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	10-18	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	18-28	---	---	0.10-10.00	---	---	---
470: Sumeadow-----	0-0	---	0.03-0.09	141.00-250.00	0.55-0.65	---	70-90
	0-2	10-18	0.80-1.00	14.00-42.00	0.09-0.13	0.0-2.9	10-18
	2-13	10-18	1.25-1.35	14.00-42.00	0.03-0.06	0.0-2.9	3.0-5.0
	13-65	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
Lostridge-----	0-3	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	5.0-10
	3-11	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	11-23	12-18	1.30-1.50	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
	23-29	10-18	1.30-1.50	14.00-42.00	0.09-0.13	0.0-2.9	0.0-0.8
	29-39	---	---	0.42-141.00	---	---	---
471: Sumeadow-----	0-0	---	0.03-0.09	141.00-250.00	0.55-0.65	---	70-90
	0-2	10-18	0.80-1.00	14.00-42.00	0.09-0.13	0.0-2.9	10-18
	2-13	10-18	1.25-1.35	14.00-42.00	0.03-0.06	0.0-2.9	3.0-5.0
	13-65	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
Sumeadow-----	0-0	---	0.03-0.09	141.00-250.00	0.55-0.65	---	70-90
	0-2	10-18	0.80-1.00	14.00-42.00	0.09-0.13	0.0-2.9	10-18
	2-13	10-18	1.25-1.35	14.00-42.00	0.03-0.06	0.0-2.9	3.0-5.0
	13-65	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
480: Aspetill-----	0-5	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	5.0-8.0
	5-26	18-25	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-4.0
	26-60	15-25	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	0.5-1.0
Aspetill-----	0-5	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	5.0-8.0
	5-26	18-25	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-4.0
	26-60	15-25	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	0.5-1.0

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
481:							
Aspetill-----	0-5	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	5.0-8.0
	5-26	18-25	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-4.0
	26-60	15-25	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	0.5-1.0
Aspetill-----	0-5	10-18	1.20-1.25	14.00-42.00	0.10-0.12	0.0-2.9	5.0-8.0
	5-26	18-25	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-4.0
	26-60	15-25	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	0.5-1.0
490:							
Clodburst-----	0-8	8-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	8-16	15-25	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	1.0-3.0
	16-29	18-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
	29-60	15-25	1.30-1.40	14.00-42.00	0.07-0.11	0.0-2.9	0.5-1.0
Murain-----	0-2	8-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	2-7	8-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	7-18	15-25	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	18-26	20-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	2.0-3.0
	26-41	18-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
	41-60	18-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
491:							
Clodburst-----	0-8	8-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	8-16	15-25	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	1.0-3.0
	16-29	18-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
	29-60	15-25	1.30-1.40	14.00-42.00	0.07-0.11	0.0-2.9	0.5-1.0
Murain-----	0-2	8-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	2-7	8-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	7-18	15-25	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	18-26	20-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	2.0-3.0
	26-41	18-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
	41-60	18-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
Hardtil-----	0-3	2-8	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	2.0-4.0
	3-7	8-15	1.40-1.60	42.00-141.00	0.06-0.08	0.0-2.9	2.0-4.0
	7-18	8-15	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	0.5-1.0
	18-28	---	---	0.00-0.01	---	---	---
500:							
Chrisflat-----	0-7	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	7-26	18-25	1.30-1.40	4.00-14.00	0.09-0.10	3.0-5.9	1.0-3.0
	26-60	20-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
510:							
Rubble Land-----	---	---	---	---	---	---	---
Lithnip-----	0-1	10-18	1.25-1.35	14.00-42.00	0.03-0.06	0.0-2.9	1.0-2.0
	1-5	12-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	0.5-1.0
	5-15	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
Fishsnooze-----	0-1	10-18	0.80-1.00	14.00-42.00	0.09-0.13	0.0-2.9	10-18
	1-9	10-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	5.0-10
	9-13	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	13-35	12-18	1.30-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.5-1.0
	35-45	---	---	0.00-0.01	---	---	---
511:							
Rock Outcrop-----	---	---	---	---	---	---	---
Snowtell-----	0-3	8-15	1.30-1.50	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	3-10	8-15	1.30-1.50	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	10-20	---	---	0.00-0.01	---	---	---
Forsell-----	0-1	8-15	0.80-1.00	14.00-42.00	0.09-0.13	0.0-2.9	10-15
	1-11	8-15	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	2.0-8.0
	11-27	8-15	1.25-1.35	14.00-42.00	0.07-0.09	0.0-2.9	0.5-1.0
	27-60	8-15	1.25-1.35	14.00-42.00	0.07-0.09	0.0-2.9	0.5-1.0

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
512: Rock Outcrop-----	---	---	---	---	---	---	---
Snowtell-----	0-3	8-15	1.30-1.50	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	3-10	8-15	1.30-1.50	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	10-20	---	---	0.00-0.01	---	---	---
513: Rubble Land-----	---	---	---	---	---	---	---
Holdon-----	0-3	3-10	1.35-1.55	42.00-141.00	0.05-0.07	0.0-2.9	0.5-1.0
	3-23	8-15	1.35-1.55	14.00-42.00	0.04-0.08	0.0-2.9	0.2-0.8
	23-47	---	---	42.00-141.00	---	---	0.0-0.0
	47-57	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
520: Canfire-----	0-2	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	1.0-3.0
	2-7	18-25	1.30-1.45	4.00-14.00	0.09-0.10	3.0-5.9	1.0-3.0
	7-17	18-25	1.30-1.45	4.00-14.00	0.09-0.10	3.0-5.9	0.5-1.0
	17-27	---	---	0.00-0.01	---	---	---
Crispy-----	0-7	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	1.0-3.0
	7-15	18-25	1.30-1.45	4.00-14.00	0.09-0.10	3.0-5.9	0.5-1.0
	15-25	---	---	0.42-141.00	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
530: Elaero-----	0-6	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	2.0-4.0
	6-16	12-18	1.45-1.65	14.00-42.00	0.06-0.08	0.0-2.9	1.0-3.0
	16-21	12-18	1.45-1.65	14.00-42.00	0.06-0.08	0.0-2.9	0.5-1.0
	21-31	---	---	0.10-10.00	---	---	---
Lockgate-----	0-14	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	2.0-4.0
	14-23	12-18	1.45-1.65	14.00-42.00	0.04-0.06	0.0-2.9	1.0-3.0
	23-34	12-18	1.45-1.65	14.00-42.00	0.04-0.06	0.0-2.9	0.5-1.0
	34-42	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.5-1.0
	42-52	---	---	0.10-10.00	---	---	---
Granhogany-----	0-4	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	3.0-6.0
	4-15	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	2.0-4.0
	15-25	---	---	0.10-10.00	---	---	---
Granidry-----	0-3	8-15	1.35-1.45	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	3-11	10-18	1.45-1.55	14.00-42.00	0.06-0.08	0.0-2.9	1.0-3.0
	11-16	15-25	1.45-1.55	4.00-14.00	0.09-0.10	3.0-5.9	0.5-1.0
	16-26	---	---	0.10-10.00	---	---	---
531: Elaero-----	0-6	8-15	1.35-1.45	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	6-16	12-18	1.45-1.65	14.00-42.00	0.06-0.08	0.0-2.9	1.0-3.0
	16-21	12-18	1.45-1.65	14.00-42.00	0.06-0.08	0.0-2.9	0.5-1.0
	21-31	---	---	0.10-10.00	---	---	---
Elaero-----	0-6	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	2.0-4.0
	6-16	12-18	1.45-1.65	14.00-42.00	0.06-0.08	0.0-2.9	1.0-3.0
	16-21	12-18	1.45-1.65	14.00-42.00	0.06-0.08	0.0-2.9	0.5-1.0
	21-31	---	---	0.42-141.00	---	---	---
532: Elaero-----	0-6	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	2.0-4.0
	6-16	12-18	1.45-1.65	14.00-42.00	0.06-0.08	0.0-2.9	1.0-3.0
	16-21	12-18	1.45-1.65	14.00-42.00	0.06-0.08	0.0-2.9	0.5-1.0
	21-31	---	---	0.10-10.00	---	---	---
Granidry-----	0-3	8-15	1.35-1.45	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	3-11	10-18	1.45-1.55	14.00-42.00	0.06-0.08	0.0-2.9	1.0-3.0
	11-16	15-25	1.45-1.55	4.00-14.00	0.09-0.10	3.0-5.9	0.5-1.0
	16-26	---	---	0.10-10.00	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
Rock Outcrop-----	---	---	---	---	---	---	---
540:							
Lostcannon, moist-----	0-18	8-12	1.35-1.45	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	18-25	10-18	1.45-1.55	14.00-42.00	0.06-0.08	0.0-2.9	1.0-3.0
	25-36	10-18	1.45-1.55	14.00-42.00	0.06-0.08	0.0-2.9	0.5-1.0
	36-60	10-18	1.45-1.55	14.00-42.00	0.06-0.08	0.0-2.9	0.5-1.0
Lostcannon-----	0-18	8-12	1.35-1.45	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	18-25	10-18	1.45-1.55	14.00-42.00	0.06-0.08	0.0-2.9	1.0-3.0
	25-36	10-18	1.45-1.55	14.00-42.00	0.06-0.08	0.0-2.9	0.5-1.0
	36-60	10-18	1.45-1.55	14.00-42.00	0.06-0.08	0.0-2.9	0.5-1.0
560:							
Dunderberg-----	0-5	8-15	1.20-1.30	14.00-42.00	0.10-0.14	0.0-2.9	3.0-5.0
	5-9	8-15	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	3.0-5.0
	9-28	8-15	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	2.0-4.0
	28-39	8-18	1.20-1.30	14.00-42.00	0.06-0.10	0.0-2.9	0.5-1.0
	39-60	8-18	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	0.5-1.0
Dunderberg, warm-----	0-5	8-15	1.20-1.30	14.00-42.00	0.10-0.14	0.0-2.9	3.0-5.0
	5-9	8-15	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	3.0-5.0
	9-28	8-15	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	2.0-4.0
	28-39	8-18	1.20-1.30	14.00-42.00	0.06-0.10	0.0-2.9	0.5-1.0
	39-60	8-18	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	0.5-1.0
Conwayridge-----	0-4	8-15	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	1.0-3.0
	4-11	10-18	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	1.0-3.0
	11-63	8-15	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	0.5-1.0
Dunderberg, moist-----	0-5	8-15	1.20-1.30	14.00-42.00	0.10-0.14	0.0-2.9	3.0-5.0
	5-9	8-15	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	3.0-5.0
	9-28	8-15	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	2.0-4.0
	28-39	8-18	1.20-1.30	14.00-42.00	0.06-0.10	0.0-2.9	0.5-1.0
	39-60	8-18	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	0.5-1.0
561:							
Dunderberg-----	0-5	8-15	1.20-1.30	14.00-42.00	0.10-0.14	0.0-2.9	3.0-5.0
	5-9	8-15	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	3.0-5.0
	9-28	8-15	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	2.0-4.0
	28-39	8-18	1.20-1.30	14.00-42.00	0.06-0.10	0.0-2.9	0.5-1.0
	39-60	8-18	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	0.5-1.0
Dunderberg, warm-----	0-5	8-15	1.20-1.30	14.00-42.00	0.10-0.14	0.0-2.9	3.0-5.0
	5-9	8-15	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	3.0-5.0
	9-28	8-15	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	2.0-4.0
	28-39	8-18	1.20-1.30	14.00-42.00	0.06-0.10	0.0-2.9	0.5-1.0
	39-60	8-18	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	0.5-1.0
Dunderberg, moist-----	0-5	8-15	1.20-1.30	14.00-42.00	0.10-0.14	0.0-2.9	3.0-5.0
	5-9	8-15	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	3.0-5.0
	9-28	8-15	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	2.0-4.0
	28-39	8-18	1.20-1.30	14.00-42.00	0.06-0.10	0.0-2.9	0.5-1.0
	39-60	8-18	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	0.5-1.0
570:							
Angelwhine-----	0-15	10-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	2.0-4.0
	15-23	12-18	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	1.0-3.0
	23-43	18-25	1.35-1.50	4.00-14.00	0.10-0.14	0.0-2.9	0.5-1.0
	43-60	15-20	1.35-1.50	4.00-14.00	0.10-0.14	0.0-2.9	0.2-0.8
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
Hawkridge-----	0-1	10-18	1.25-1.35	14.00-42.00	0.04-0.08	0.0-2.9	2.0-4.0
	1-7	10-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	7-14	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
580:							
Murain-----	0-2	8-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	2-7	8-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	7-18	15-25	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	18-26	20-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	2.0-3.0
	26-41	18-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
	41-60	18-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
Shorthike-----	0-2	4-10	1.35-1.45	42.00-141.00	0.03-0.05	0.0-2.9	2.0-4.0
	2-10	6-12	1.35-1.45	42.00-141.00	0.03-0.05	0.0-2.9	2.0-4.0
	10-30	10-15	1.35-1.45	14.00-42.00	0.08-0.12	0.0-2.9	1.0-3.0
	30-60	10-15	1.35-1.45	14.00-42.00	0.08-0.12	0.0-2.9	0.5-1.0
Murain, moist-----	0-2	8-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	2-7	8-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	7-18	15-25	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	18-26	20-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	2.0-3.0
	26-41	18-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
	41-60	18-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
581:							
Murain-----	0-2	8-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	2-7	8-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	7-18	15-25	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	18-26	20-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	2.0-3.0
	26-41	18-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
	41-60	18-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
Murain-----	0-2	8-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	2-7	8-18	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	3.0-5.0
	7-18	15-25	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	18-26	20-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	2.0-3.0
	26-41	18-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
	41-60	18-25	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
590:							
Loope-----	0-1	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-14	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
Heenlake-----	0-6	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	6-18	25-30	1.30-1.40	1.40-4.00	0.19-0.21	3.0-5.9	1.0-3.0
	18-22	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	22-32	---	---	0.01-0.42	---	---	---
Carshal-----	0-2	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	1.0-3.0
	2-5	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	0.5-1.0
	5-14	---	---	0.01-0.42	---	---	---
	14-24	---	---	0.00-0.01	---	---	---
591:							
Loope-----	0-1	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-14	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
Heenlake-----	0-6	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	6-18	25-30	1.30-1.40	1.40-4.00	0.19-0.21	3.0-5.9	1.0-3.0
	18-22	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	22-32	---	---	0.01-0.42	---	---	---
Celeridge-----	0-3	8-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	3-8	8-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	8-19	18-27	1.25-1.35	4.00-14.00	0.09-0.10	0.0-2.9	3.0-5.0
	19-29	---	---	0.00-0.01	---	---	---
592:							
Loope-----	0-1	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-14	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
Pinew-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	3-8	18-25	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-2.0
	8-15	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	15-25	---	---	0.01-0.42	---	---	---
Heenlake-----	0-6	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	6-18	25-30	1.30-1.40	1.40-4.00	0.19-0.21	3.0-5.9	1.0-3.0
	18-22	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	22-32	---	---	0.01-0.42	---	---	---
600: Snowtell-----	0-3	8-15	1.30-1.50	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	3-10	8-15	1.30-1.50	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	10-20	---	---	0.00-0.01	---	---	---
Sonorapass-----	0-8	8-15	1.30-1.50	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	8-17	10-18	1.30-1.50	14.00-42.00	0.05-0.07	0.0-2.9	2.0-4.0
	17-21	10-18	1.30-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.5-1.0
	21-31	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
610: Forsell-----	0-1	8-15	0.80-1.00	14.00-42.00	0.09-0.13	0.0-2.9	10-15
	1-11	8-15	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	2.0-8.0
	11-27	8-15	1.25-1.35	14.00-42.00	0.07-0.09	0.0-2.9	0.5-1.0
	27-60	8-15	1.25-1.35	14.00-42.00	0.07-0.09	0.0-2.9	0.5-1.0
Snowtell-----	0-3	8-15	1.30-1.50	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	3-10	8-15	1.30-1.50	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	10-20	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
611: Forsell-----	0-1	8-15	0.80-1.00	14.00-42.00	0.09-0.13	0.0-2.9	10-15
	1-11	8-15	1.20-1.30	14.00-42.00	0.09-0.13	0.0-2.9	2.0-8.0
	11-27	8-15	1.25-1.35	14.00-42.00	0.07-0.09	0.0-2.9	0.5-1.0
	27-60	8-15	1.25-1.35	14.00-42.00	0.07-0.09	0.0-2.9	0.5-1.0
Snowtell-----	0-3	8-15	1.30-1.50	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	3-10	8-15	1.30-1.50	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	10-20	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
620: Indian Creek-----	0-1	10-20	1.25-1.45	14.00-42.00	0.08-0.10	0.0-2.9	0.8-2.0
	1-3	20-30	1.50-1.65	1.40-4.00	0.14-0.17	3.0-5.9	1.0-2.0
	3-20	35-55	1.25-1.45	0.01-0.42	0.14-0.16	6.0-8.9	0.5-1.0
	20-25	---	---	0.00-0.01	---	---	---
	25-60	5-20	1.40-1.60	1.40-42.00	0.00-0.03	0.0-2.9	0.0-0.5
630: Olac-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	0.5-1.0
	3-10	23-30	1.25-1.45	4.00-14.00	0.05-0.07	0.0-2.9	0.5-1.0
	10-20	---	---	0.00-0.01	---	---	---
Flex-----	0-2	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	0.5-1.0
	2-10	18-27	1.25-1.45	4.00-14.00	0.08-0.10	0.0-2.9	0.5-1.0
	10-20	---	---	0.01-0.42	---	---	---
Duco-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	1.0-3.0
	3-5	10-20	1.35-1.50	4.00-14.00	0.07-0.08	0.0-2.9	0.8-2.0
	5-18	27-35	1.40-1.60	1.40-4.00	0.08-0.10	3.0-5.9	0.5-2.0
	18-28	---	---	0.00-0.01	---	---	---
640: Koontz-----	0-2	5-15	1.30-1.50	14.00-42.00	0.06-0.09	0.0-2.9	1.0-3.0
	2-12	20-35	1.20-1.40	1.40-4.00	0.09-0.11	3.0-5.9	1.0-2.0
	12-22	---	---	0.01-0.42	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
Nosrac-----	0-12	5-15	1.30-1.50	14.00-42.00	0.06-0.09	0.0-2.9	1.0-3.0
	12-45	25-35	1.40-1.60	1.40-4.00	0.10-0.12	0.0-2.9	0.5-2.0
	45-60	18-30	1.40-1.60	4.00-14.00	0.09-0.10	3.0-5.9	0.0-0.5
650: Shree-----	0-14	15-25	1.20-1.40	4.00-14.00	0.10-0.12	0.0-2.9	1.0-2.0
	14-40	27-35	1.25-1.45	1.40-4.00	0.06-0.09	3.0-5.9	0.5-1.0
	40-60	10-25	1.35-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.0-0.5
651: Shree-----	0-14	15-25	1.20-1.40	4.00-14.00	0.10-0.12	0.0-2.9	1.0-2.0
	14-40	27-35	1.25-1.45	1.40-4.00	0.06-0.09	3.0-5.9	0.5-1.0
	40-60	10-25	1.35-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.0-0.5
Holbrook-----	0-8	15-25	1.20-1.40	4.00-14.00	0.10-0.12	0.0-2.9	1.0-2.0
	8-60	5-10	1.35-1.55	14.00-42.00	0.04-0.06	0.0-2.9	0.5-1.0
660: Delhew-----	0-16	4-9	1.25-1.45	14.00-42.00	0.06-0.08	0.0-2.9	2.0-3.0
	16-27	14-18	1.25-1.45	14.00-42.00	0.05-0.07	0.0-2.9	1.0-2.0
	27-40	14-18	1.35-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.5-1.0
	40-60	8-12	1.40-1.55	0.10-10.00	0.04-0.06	0.0-2.9	0.5-1.0
Grandridge-----	0-1	8-15	1.35-1.45	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	1-10	18-25	1.35-1.45	4.00-14.00	0.09-0.10	3.0-5.9	1.0-3.0
	10-18	18-25	1.35-1.45	4.00-14.00	0.09-0.10	3.0-5.9	0.5-1.0
	18-28	---	---	0.10-10.00	---	---	---
Bakscratch-----	0-7	8-12	1.35-1.45	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	7-11	12-18	1.30-1.50	14.00-42.00	0.05-0.07	0.0-2.9	1.0-2.0
	11-16	12-18	1.30-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.5-1.0
	16-26	---	---	0.10-10.00	---	---	---
670: Springmeyer-----	0-2	10-20	1.30-1.50	4.00-14.00	0.12-0.14	0.0-2.9	1.0-3.0
	2-10	10-20	1.30-1.50	4.00-14.00	0.12-0.14	0.0-2.9	1.0-3.0
	10-32	25-35	1.25-1.45	1.40-4.00	0.14-0.16	3.0-5.9	0.8-2.0
	32-60	14-25	1.25-1.45	4.00-14.00	0.11-0.13	3.0-5.9	0.0-0.5
671: Springmeyer-----	0-2	10-20	1.30-1.50	4.00-14.00	0.12-0.14	0.0-2.9	1.0-3.0
	2-10	10-20	1.30-1.50	4.00-14.00	0.12-0.14	0.0-2.9	1.0-3.0
	10-22	25-35	1.25-1.45	1.40-4.00	0.14-0.16	3.0-5.9	0.8-2.0
	22-60	14-25	1.25-1.45	4.00-14.00	0.11-0.13	3.0-5.9	0.0-0.5
Cassiro-----	0-15	8-18	1.35-1.45	14.00-42.00	0.10-0.12	0.0-2.9	1.0-3.0
	15-45	35-50	1.25-1.45	0.01-0.42	0.08-0.11	3.0-5.9	0.0-1.0
	45-55	---	---	0.42-1.40	---	---	---
680: Rolldown-----	0-2	8-18	1.20-1.30	14.00-42.00	0.10-0.14	0.0-2.9	1.0-3.0
	2-10	8-18	1.20-1.30	14.00-42.00	0.10-0.14	0.0-2.9	1.0-3.0
	10-60	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	0.5-1.0
Mountpatterson-----	0-9	6-12	1.30-1.50	14.00-42.00	0.06-0.08	0.0-2.9	2.0-4.0
	9-18	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	18-28	---	---	0.00-0.01	---	---	---
Rubble Land-----	---	---	---	---	---	---	---
700: Coldtree-----	0-1	3-10	1.40-1.50	42.00-141.00	0.03-0.05	0.0-2.9	2.0-4.0
	1-9	8-12	1.35-1.55	42.00-141.00	0.04-0.08	0.0-2.9	0.5-1.0
	9-24	10-16	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	0.2-0.8
	24-44	10-18	1.20-1.30	14.00-42.00	0.08-0.12	0.0-2.9	0.2-0.8
	44-54	---	---	0.00-0.01	---	---	---
Rubble Land-----	---	---	---	---	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
710:							
Bakscratch-----	0-7	8-12	1.35-1.45	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	7-11	12-18	1.30-1.50	14.00-42.00	0.05-0.07	0.0-2.9	1.0-2.0
	11-16	12-18	1.30-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.5-1.0
	16-26	---	---	0.10-10.00	---	---	---
Grandridge-----	0-1	8-15	1.35-1.45	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	1-10	18-25	1.35-1.45	4.00-14.00	0.09-0.10	3.0-5.9	1.0-3.0
	10-18	18-25	1.35-1.45	4.00-14.00	0.09-0.10	3.0-5.9	0.5-1.0
	18-28	---	---	0.10-10.00	---	---	---
McTom-----	0-2	---	0.03-0.09	141.00-250.00	0.55-0.65	---	70-90
	2-18	3-10	1.40-1.60	42.00-141.00	0.05-0.07	0.0-2.9	1.0-3.0
	18-34	3-8	1.40-1.60	43.00-141.00	0.04-0.06	0.0-2.9	0.2-0.8
	34-44	---	---	0.10-10.00	---	---	---
720:							
Nohelp-----	0-11	10-18	1.10-1.20	14.00-42.00	0.16-0.18	0.0-2.9	1.0-3.0
	11-21	35-45	1.35-1.45	0.42-1.40	0.08-0.12	6.0-8.9	1.0-3.0
	21-60	35-45	1.25-1.40	0.42-1.40	0.07-0.11	6.0-8.9	0.5-2.0
Joenchris-----	0-6	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	6-14	35-45	1.30-1.40	0.42-1.40	0.15-0.17	6.0-8.9	1.0-3.0
	14-26	40-50	1.30-1.40	0.42-1.40	0.15-0.18	6.0-8.9	0.5-1.0
	26-60	35-50	1.35-1.45	0.42-1.40	0.08-0.12	6.0-8.9	0.2-0.8
730:							
Burchflat-----	0-9	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	3.0-5.0
	9-21	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	21-36	18-27	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
	36-46	---	---	0.00-0.01	---	---	---
Loope-----	0-1	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-14	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
731:							
Burchflat-----	0-9	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	3.0-5.0
	9-21	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	21-36	18-27	1.30-1.40	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0
	36-46	---	---	0.00-0.01	---	---	---
Celeridge-----	0-3	8-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	3-8	8-18	1.10-1.20	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	8-19	18-27	1.25-1.35	4.00-14.00	0.09-0.10	0.0-2.9	3.0-5.0
	19-29	---	---	0.00-0.01	---	---	---
Loope-----	0-1	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-14	18-27	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
740:							
Jackflat-----	0-6	8-15	1.35-1.45	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	6-14	15-25	1.35-1.45	4.00-14.00	0.09-0.10	3.0-5.9	1.0-3.0
	14-45	20-27	1.35-1.45	4.00-14.00	0.09-0.10	3.0-5.9	0.5-1.0
	45-55	---	---	0.10-10.00	---	---	---
Grandridge-----	0-1	8-15	1.35-1.45	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	1-10	18-25	1.35-1.45	4.00-14.00	0.09-0.10	3.0-5.9	1.0-3.0
	10-18	18-25	1.35-1.45	4.00-14.00	0.09-0.10	3.0-5.9	0.5-1.0
	18-28	---	---	0.10-10.00	---	---	---
760:							
Thiefridge-----	0-1	---	0.40-0.80	42.00-141.00	0.20-0.30	---	50-90
	1-4	6-18	0.60-1.00	14.00-42.00	0.09-0.11	0.0-2.9	4.0-10
	4-8	6-18	1.00-1.20	14.00-42.00	0.09-0.11	0.0-2.9	4.0-10
	8-12	6-18	1.10-1.30	14.00-42.00	0.09-0.11	0.0-2.9	3.0-5.0
	12-17	18-25	1.15-1.35	14.00-42.00	0.10-0.12	0.0-2.9	2.0-4.0
	17-27	---	---	0.00-0.01	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
Thief ridge-----	0-1	---	0.40-0.80	42.00-141.00	0.20-0.30	---	50-90
	1-4	6-18	0.60-1.00	14.00-42.00	0.09-0.11	0.0-2.9	4.0-10
	4-8	6-18	1.00-1.20	14.00-42.00	0.09-0.11	0.0-2.9	4.0-10
	8-12	6-18	1.10-1.30	14.00-42.00	0.09-0.11	0.0-2.9	3.0-5.0
	12-17	18-25	1.15-1.35	14.00-42.00	0.10-0.12	0.0-2.9	2.0-4.0
	17-27	---	---	0.00-0.01	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
770:							
Sweetmount-----	0-2	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	2-16	18-27	1.30-1.45	4.00-14.00	0.09-0.10	3.0-5.9	1.0-3.0
	16-24	27-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	1.0-3.0
	24-39	27-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-3.0
	39-55	35-50	1.35-1.45	0.42-1.40	0.07-0.11	6.0-8.9	0.5-1.0
	55-65	---	---	0.01-0.42	---	---	---
Hawkinspeak-----	0-3	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	3-9	8-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-5.0
	9-33	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	33-43	---	---	0.00-0.01	---	---	---
Hawkridge-----	0-1	10-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-7	10-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	7-14	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
780:							
Granhogany-----	0-4	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	3.0-6.0
	4-15	3-8	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	2.0-4.0
	15-25	---	---	0.10-10.00	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
790:							
Dab-----	0-3	10-15	1.15-1.35	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	3-10	10-15	1.15-1.35	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	10-24	18-25	1.30-1.50	4.00-14.00	0.08-0.10	0.0-2.9	1.0-2.0
	24-60	18-25	1.40-1.55	4.00-14.00	0.08-0.10	0.0-2.9	0.5-0.8
Dab-----	0-3	10-15	1.15-1.35	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	3-10	10-15	1.15-1.35	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	10-24	18-25	1.30-1.50	4.00-14.00	0.08-0.10	0.0-2.9	1.0-2.0
	24-60	18-25	1.40-1.55	4.00-14.00	0.08-0.10	0.0-2.9	0.5-0.8
791:							
Dab-----	0-3	10-15	1.15-1.35	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	3-12	10-15	1.15-1.35	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	12-24	18-25	1.30-1.50	4.00-14.00	0.08-0.10	0.0-2.9	1.0-2.0
	24-60	18-25	1.40-1.55	4.00-14.00	0.08-0.10	0.0-2.9	0.5-0.8
Longday-----	0-5	8-18	1.20-1.30	14.00-42.00	0.10-0.14	0.0-2.9	2.0-4.0
	5-13	18-25	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	13-60	18-25	1.30-1.40	4.00-14.00	0.09-0.10	0.0-2.9	0.5-1.0
Thief ridge-----	0-1	---	0.40-0.80	42.00-141.00	0.20-0.30	---	50-90
	1-4	6-18	0.60-1.00	14.00-42.00	0.09-0.11	0.0-2.9	4.0-10
	4-8	6-18	1.00-1.20	14.00-42.00	0.09-0.11	0.0-2.9	4.0-10
	8-12	6-18	1.10-1.30	14.00-42.00	0.09-0.11	0.0-2.9	3.0-5.0
	12-17	18-25	1.15-1.35	14.00-42.00	0.10-0.12	0.0-2.9	2.0-4.0
	17-27	---	---	0.00-0.01	---	---	---
792:							
Dab-----	0-3	10-15	1.15-1.35	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	3-10	10-15	1.15-1.35	14.00-42.00	0.07-0.09	0.0-2.9	2.0-4.0
	10-24	18-25	1.30-1.50	4.00-14.00	0.08-0.10	0.0-2.9	1.0-2.0
	24-60	18-25	1.40-1.55	4.00-14.00	0.08-0.10	0.0-2.9	0.5-0.8
Aspocket-----	0-13	10-18	1.25-1.35	14.00-42.00	0.09-0.13	0.0-2.9	5.0-8.0
	13-38	18-27	1.30-1.40	4.00-14.00	0.09-0.13	0.0-2.9	2.0-4.0
	38-54	25-35	1.35-1.45	1.40-4.00	0.19-0.21	3.0-5.9	0.5-1.0
	54-64	---	---	0.01-0.42	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
Hawkridge-----	0-1	10-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	1-7	10-18	1.25-1.35	14.00-42.00	0.07-0.11	0.0-2.9	2.0-4.0
	7-14	18-27	1.30-1.45	4.00-14.00	0.09-0.10	0.0-2.9	1.0-3.0
	14-24	---	---	0.00-0.01	---	---	---
800: Grandridge-----	0-1	8-15	1.35-1.45	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	1-10	18-25	1.35-1.45	4.00-14.00	0.09-0.10	3.0-5.9	1.0-3.0
	10-18	18-25	1.35-1.45	4.00-14.00	0.09-0.10	3.0-5.9	0.5-1.0
	18-28	---	---	0.10-10.00	---	---	---
Delhew-----	0-16	4-9	1.25-1.45	14.00-42.00	0.06-0.08	0.0-2.9	2.0-3.0
	16-27	14-18	1.25-1.45	14.00-42.00	0.05-0.07	0.0-2.9	1.0-2.0
	27-40	14-18	1.35-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.5-1.0
	40-60	8-12	1.40-1.55	0.10-10.00	0.04-0.06	0.0-2.9	0.5-1.0
801: Grandridge-----	0-1	8-15	1.35-1.45	14.00-42.00	0.09-0.13	0.0-2.9	2.0-4.0
	1-10	18-25	1.35-1.45	4.00-14.00	0.09-0.10	3.0-5.9	1.0-3.0
	10-18	18-25	1.35-1.45	4.00-14.00	0.09-0.10	3.0-5.9	0.5-1.0
	18-28	---	---	0.10-10.00	---	---	---
Delhew-----	0-16	4-9	1.25-1.45	14.00-42.00	0.06-0.08	0.0-2.9	2.0-3.0
	16-27	14-18	1.25-1.45	14.00-42.00	0.05-0.07	0.0-2.9	1.0-2.0
	27-40	14-18	1.35-1.50	14.00-42.00	0.05-0.07	0.0-2.9	0.5-1.0
	40-60	8-12	1.40-1.55	0.10-10.00	0.04-0.06	0.0-2.9	0.5-1.0
Bullville-----	0-10	10-15	1.25-1.45	14.11-42.34	0.04-0.06	0.0-2.9	2.0-3.0
	10-15	18-25	1.35-1.50	1.41-4.23	0.06-0.08	0.0-2.9	1.0-3.0
	15-30	18-25	1.35-1.50	1.41-4.23	0.06-0.08	0.0-2.9	0.5-1.0
	30-40	---	---	0.00-0.42	---	---	---
810: Corbett-----	0-9	2-4	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	9-23	0-5	1.60-1.70	42.00-141.00	0.05-0.07	0.0-2.9	0.5-1.0
	23-33	---	---	0.42-141.00	---	---	---
Toiyabe-----	0-9	2-4	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-2.0
	9-16	2-4	1.45-1.65	42.00-141.00	0.06-0.08	0.0-2.9	0.0-0.5
	16-26	---	---	0.10-10.00	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
820: Freelpeak-----	0-2	0-1	1.70-1.80	141.00-705.00	0.00-0.01	0.0-0.1	0.0-0.0
	2-4	0-6	1.70-1.80	42.00-141.00	0.01-0.01	0.0-0.1	1.0-5.0
	4-8	0-6	1.60-1.70	42.00-141.00	0.03-0.05	0.0-0.1	0.5-1.0
	8-36	0-6	1.55-1.65	42.00-141.00	0.05-0.07	0.0-0.2	0.2-1.0
	36-46	---	---	0.10-10.00	0.00-0.00	---	---
Windyridge-----	0-2	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	2-10	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	10-20	---	---	0.10-10.00	---	---	---
Rock Outcrop-----	---	---	---	---	---	---	---
830: Windyridge-----	0-2	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	1.0-3.0
	2-10	4-10	1.45-1.65	42.00-141.00	0.03-0.05	0.0-2.9	0.0-0.5
	10-20	---	---	0.10-10.00	---	---	---
Freelpeak-----	0-2	0-1	1.70-1.80	141.00-705.00	0.00-0.01	0.0-0.1	0.0-0.0
	2-4	0-6	1.70-1.80	42.00-141.00	0.01-0.01	0.0-0.1	1.0-5.0
	4-8	0-6	1.60-1.70	42.00-141.00	0.03-0.05	0.0-0.1	0.5-1.0
	8-36	0-6	1.55-1.65	42.00-141.00	0.05-0.07	0.0-0.2	0.2-1.0
	36-46	---	---	0.10-10.00	0.00-0.00	---	---
Rock Outcrop-----	---	---	---	---	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
840:							
Lavaspring-----	0-7	10-18	0.80-1.00	4.00-14.00	0.20-0.24	0.0-2.9	6.0-10
	7-31	14-28	1.25-1.35	4.00-14.00	0.18-0.20	3.0-5.9	3.0-5.0
	31-60	8-18	1.30-1.40	14.00-42.00	0.07-0.11	0.0-2.9	1.0-3.0
Trespass-----	0-2	10-18	1.10-1.20	14.00-42.00	0.16-0.18	0.0-2.9	3.0-5.0
	2-12	18-25	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	2.0-4.0
	12-35	18-25	1.30-1.45	4.00-14.00	0.09-0.10	3.0-5.9	1.0-3.0
	35-54	18-25	1.30-1.45	4.00-14.00	0.09-0.10	3.0-5.9	0.5-1.0
	54-60	8-18	1.35-1.45	14.00-42.00	0.03-0.06	0.0-2.9	0.5-1.0
Lavaspring-----	0-7	10-18	0.80-1.00	4.00-14.00	0.20-0.24	0.0-2.9	6.0-10
	7-31	14-28	1.25-1.35	4.00-14.00	0.18-0.20	3.0-5.9	3.0-5.0
	31-60	8-18	1.30-1.40	14.00-42.00	0.07-0.11	0.0-2.9	1.0-3.0
850:							
Lunder-----	0-7	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	1.0-3.0
	7-17	50-60	1.25-1.45	0.42-1.40	0.11-0.14	6.0-8.9	0.0-0.5
	17-33	---	---	0.00-0.01	---	---	---
	33-60	5-10	1.60-1.75	1.40-4.00	0.02-0.05	0.0-2.9	0.0-0.5
851:							
Lunder-----	0-7	8-18	1.20-1.25	14.00-42.00	0.07-0.11	0.0-2.9	1.0-3.0
	7-17	50-60	1.25-1.45	0.42-1.40	0.11-0.14	6.0-8.9	0.0-0.5
	17-33	---	---	0.00-0.01	---	---	---
	33-60	5-10	1.60-1.75	1.40-4.00	0.02-0.05	0.0-2.9	0.0-0.5
Leviathan-----	0-10	8-18	1.30-1.40	14.00-42.00	0.07-0.11	0.0-2.9	1.0-3.0
	10-60	27-35	1.45-1.65	1.40-4.00	0.09-0.11	0.0-2.9	0.5-1.0
860:							
Hardnut-----	0-3	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	2.0-4.0
	3-8	18-25	1.20-1.30	4.00-14.00	0.13-0.15	0.0-2.9	1.0-3.0
	8-15	25-35	1.30-1.40	1.40-4.00	0.15-0.17	3.0-5.9	0.8-2.0
	15-25	---	---	0.00-0.01	---	---	---
Ocashe-----	0-3	10-18	1.15-1.25	14.00-42.00	0.14-0.16	0.0-2.9	1.0-3.0
	3-7	18-27	1.20-1.30	4.00-14.00	0.13-0.15	0.0-2.9	1.0-3.0
	7-13	18-27	1.20-1.30	4.00-14.00	0.13-0.15	0.0-2.9	0.5-2.0
	13-23	---	---	0.00-0.01	---	---	---
870:							
Epvip-----	0-4	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	2.0-3.0
	4-16	25-35	1.35-1.50	1.40-4.00	0.16-0.20	3.0-5.9	0.8-2.0
	16-26	---	---	0.42-141.00	---	---	---
Domehill-----	0-2	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	1.0-3.0
	2-8	18-25	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	1.0-3.0
	8-13	20-30	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	1.0-2.0
	13-23	---	---	0.00-0.01	---	---	---
Ashflat-----	0-7	10-18	1.10-1.20	14.00-42.00	0.16-0.18	0.0-2.9	1.0-3.0
	7-43	18-25	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	1.0-3.0
	43-60	25-35	1.35-1.50	1.40-4.00	0.16-0.20	3.0-5.9	0.8-2.0
871:							
Halfash-----	0-3	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	1.0-3.0
	3-8	20-27	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	1.0-3.0
	8-17	25-35	1.35-1.50	1.40-4.00	0.16-0.20	3.0-5.9	0.5-2.0
	17-27	---	---	0.42-141.00	---	---	---
Domehill-----	0-2	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	1.0-3.0
	2-8	18-25	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	1.0-3.0
	8-13	20-30	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	1.0-2.0
	13-23	---	---	0.00-0.01	---	---	---
872:							
Epvip-----	0-4	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	2.0-3.0
	4-16	25-35	1.35-1.50	1.40-4.00	0.16-0.20	3.0-5.9	0.8-2.0
	16-26	---	---	0.42-141.00	---	---	---

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
Vetash-----	0-9	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	2.0-4.0
	9-30	18-27	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	1.0-3.0
	30-46	20-27	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	0.5-1.0
	46-60	8-18	1.30-1.40	14.00-42.00	0.07-0.11	0.0-2.9	0.5-1.0
Epvip-----	0-4	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	2.0-3.0
	4-16	25-35	1.35-1.50	1.40-4.00	0.16-0.20	3.0-5.9	0.8-2.0
	16-26	---	---	0.42-141.00	---	---	---
873:							
Epvip-----	0-4	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	2.0-3.0
	4-16	25-35	1.35-1.50	1.40-4.00	0.16-0.20	3.0-5.9	0.8-2.0
	16-26	---	---	0.42-141.00	---	---	---
Hardnut-----	0-3	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	2.0-4.0
	3-8	18-25	1.20-1.30	4.00-14.00	0.13-0.15	0.0-2.9	1.0-3.0
	8-15	25-35	1.30-1.40	1.40-4.00	0.15-0.17	3.0-5.9	0.8-2.0
	15-25	---	---	0.00-0.01	---	---	---
Vetash-----	0-9	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	2.0-4.0
	9-30	18-27	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	1.0-3.0
	30-46	20-27	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	0.5-1.0
	46-60	8-18	1.30-1.40	14.00-42.00	0.07-0.11	0.0-2.9	0.5-1.0
880:							
Mopana-----	0-5	8-15	1.20-1.30	14.00-42.00	0.10-0.14	0.0-2.9	1.0-3.0
	5-9	18-27	1.20-1.40	4.00-14.00	0.15-0.17	3.0-5.9	1.0-2.0
	9-19	35-50	1.30-1.45	0.01-0.42	0.12-0.14	6.0-8.9	0.5-1.0
	19-60	---	---	0.00-0.01	---	---	---
890:							
Masonic-----	0-4	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	2.0-4.0
	4-7	18-25	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	1.0-3.0
	7-10	25-35	1.30-1.40	1.40-4.00	0.15-0.17	3.0-5.9	1.0-2.0
	10-21	25-35	1.35-1.45	1.40-4.00	0.13-0.15	3.0-5.9	1.0-2.0
	21-31	---	---	0.42-141.00	---	---	---
Epvip-----	0-4	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	2.0-3.0
	4-16	25-35	1.35-1.50	1.40-4.00	0.16-0.20	3.0-5.9	0.8-2.0
	16-26	---	---	0.42-141.00	---	---	---
Domehill-----	0-2	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	1.0-3.0
	2-8	18-25	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	1.0-3.0
	8-13	20-30	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	1.0-2.0
	13-23	---	---	0.00-0.01	---	---	---
900:							
Brokenhoe-----	0-6	10-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	1.0-3.0
	6-10	18-25	1.25-1.35	4.00-14.00	0.12-0.16	3.0-5.9	1.0-3.0
	10-20	35-50	1.30-1.40	0.42-1.40	0.10-0.12	6.0-8.9	0.5-1.0
	20-37	---	---	0.00-0.01	---	---	---
	37-60	12-18	1.50-1.60	0.42-1.40	0.04-0.06	0.0-2.9	0.0-0.5
Fisherdig-----	0-5	8-18	1.15-1.25	14.00-42.00	0.14-0.18	0.0-2.9	1.0-3.0
	5-8	18-30	1.20-1.30	4.00-14.00	0.15-0.17	3.0-5.9	1.0-3.0
	8-19	27-55	1.35-1.45	0.42-1.40	0.08-0.12	6.0-8.9	0.5-1.0
	19-46	---	---	0.00-0.01	---	---	---
	46-60	12-18	1.50-1.60	0.42-1.40	0.04-0.06	0.0-2.9	0.0-0.5
910:							
Indian Creek-----	0-1	10-20	1.25-1.45	14.00-42.00	0.08-0.10	0.0-2.9	0.8-2.0
	1-3	20-30	1.50-1.65	1.40-4.00	0.14-0.17	3.0-5.9	1.0-2.0
	3-20	35-55	1.25-1.45	0.01-0.42	0.14-0.16	6.0-8.9	0.5-1.0
	20-25	---	---	0.00-0.01	---	---	---
	25-60	5-20	1.40-1.60	1.40-42.00	0.00-0.03	0.0-2.9	0.0-0.5
Haybourne-----	0-5	5-15	1.30-1.50	14.00-42.00	0.08-0.10	0.0-2.9	1.0-2.0
	5-20	8-18	1.35-1.55	14.00-42.00	0.10-0.12	0.0-2.9	0.0-0.5
	20-60	5-12	1.45-1.65	14.00-42.00	0.07-0.10	0.0-2.9	0.0-0.5

TABLE 24.-- Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	g/cc	um/sec	In/in	Pct	Pct
920:							
Aquic Torrifluvents-----	0-6	3-8	1.45-1.60	14.00-42.00	0.07-0.08	0.0-2.9	1.0-2.0
	6-60	3-18	1.60-1.75	14.00-705.00	0.03-0.08	0.0-2.9	0.2-0.5
Conway-----	0-4	10-15	1.35-1.45	14.11-42.34	0.10-0.13	0.0-2.9	2.0-4.0
	4-42	10-15	1.35-1.45	14.11-42.34	0.08-0.10	0.0-2.9	2.0-4.0
	42-60	15-20	1.40-1.60	14.11-42.34	0.07-0.17	0.0-2.9	0.2-0.4
Torrifluventic Haploxerolls--	0-5	6-10	1.45-1.55	14.00-42.00	0.07-0.08	0.0-2.9	1.0-3.0
	5-18	2-6	1.50-1.60	42.00-141.00	0.07-0.08	0.0-2.9	1.0-2.0
	18-60	3-18	1.60-1.75	14.00-705.00	0.03-0.08	0.0-2.9	0.2-0.5
930:							
Lavaspring-----	0-7	10-18	0.80-1.00	4.00-14.00	0.20-0.24	0.0-2.9	6.0-10
	7-31	14-28	1.25-1.35	4.00-14.00	0.18-0.20	3.0-5.9	3.0-5.0
	31-60	8-18	1.30-1.40	14.00-42.00	0.07-0.11	0.0-2.9	1.0-3.0
Lavaspring-----	0-7	10-18	0.80-1.00	4.00-14.00	0.20-0.24	0.0-2.9	6.0-10
	7-31	14-28	1.25-1.35	4.00-14.00	0.18-0.20	3.0-5.9	3.0-5.0
	31-60	8-18	1.30-1.40	14.00-42.00	0.07-0.11	0.0-2.9	1.0-3.0
960:							
Rose Creek-----	0-18	10-15	1.30-1.45	4.00-14.00	0.16-0.18	0.0-2.9	1.0-2.0
	18-60	8-18	1.50-1.70	14.00-42.00	0.13-0.15	0.0-2.9	0.5-2.0
998:							
Dumps-----	---	---	---	---	---	---	---
Pits-----	---	---	---	---	---	---	---
999:							
Water-----	---	---	---	---	---	---	---

Soil properties are measured or inferred from direct observations in the field or laboratory. Laboratory data for selected pedons are included in "Selected Chemical Laboratory Data" Report. (Absence of an entry indicates that data were not estimated.)

[illegible]

TABLE 25.-- Chemical Properties of the Soils

[illegible]

TABLE 25.-- Chemical Properties of the Soils

[illegible]

TABLE 25.-- Chemical Properties of the Soils

[illegible]

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
140: Temo -----	0-10	2-8	---	1-3	5.1-6.5	0	0	0	0
	10-16	2-8	---	0-2	5.1-6.0	0	0	0	0
	16-26	---	---	---	---	---	---	---	---
Dagget -----	0-8	1-5	1.1-5.0	---	5.6-6.5	0	0	0	0
	8-41	1-5	1.0-4.6	---	5.6-6.5	0	0	0	0
	41-51	---	---	---	---	0	0	0	0
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
150: Mottskel -----	0-18	4-10	5.0-20	---	5.6-7.3	0	0	0	0
	18-60	2-10	5.0-15	---	5.6-7.3	0	0	0	0
160: Hopeval -----	0-5	10-18	30-50	---	5.6-6.5	0	0	0	0
	5-12	10-18	13-26	---	5.6-6.5	0	0	0	0
	12-15	10-18	11-20	---	5.6-6.5	0	0	0	0
	15-26	8-18	9.0-18	---	5.6-6.5	0	0	0	0
	26-33	8-18	6.0-12	---	5.6-6.5	0	0	0	0
	33-60	5-15	3.0-8.0	---	5.6-6.5	0	0	0	0
Hopeval -----	0-2	10-18	13-26	---	5.6-6.5	0	0	0	0
	2-12	10-18	13-26	---	5.6-6.5	0	0	0	0
	12-15	10-18	11-20	---	5.6-6.5	0	0	0	0
	15-26	8-18	9.0-18	---	5.6-6.5	0	0	0	0
	26-33	8-18	6.0-12	---	5.6-6.5	0	0	0	0
	33-60	5-15	3.0-8.0	---	5.6-6.5	0	0	0	0
162: Corralval -----	0-3	10-18	12-22	---	5.6-6.5	0	0	0	0
	3-20	12-18	9.0-18	---	5.6-6.5	0	0	0	0
	20-26	12-18	9.0-18	---	5.6-6.5	0	0	0	0
	26-45	12-18	7.0-15	---	5.6-6.5	0	0	0	0
	45-60	3-8	3.0-8.0	---	5.6-6.5	0	0	0	0
Hopeval -----	0-2	10-18	13-26	---	5.6-6.5	0	0	0	0
	2-12	10-18	13-26	---	5.6-6.5	0	0	0	0
	12-15	10-18	11-20	---	5.6-6.5	0	0	0	0
	15-26	8-18	9.0-18	---	5.6-6.5	0	0	0	0
	26-33	8-18	6.0-12	---	5.6-6.5	0	0	0	0
	33-60	5-15	3.0-8.0	---	5.6-6.5	0	0	0	0
170: Burnlake -----	0-2	8-15	9.0-15	---	6.1-7.3	0	0	0	0
	2-17	8-15	9.0-16	---	6.1-7.3	0	0	0	0
	17-26	8-15	9.0-16	---	6.1-7.3	0	0	0	0
	26-60	3-10	0.0-10	---	6.1-7.3	0	0	0	0

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
Roadcat -----	0-8	3-10	4.0-10	---	5.6-6.5	0	0	0	0
	8-19	8-12	9.0-16	---	5.6-7.3	0	0	0	0
	19-36	3-10	2.0-6.0	---	5.6-7.3	0	0	0	0
	36-60	3-10	2.0-6.0	---	5.6-7.3	0	0	0	0
171: Stumpatil -----	0-6	8-15	9.0-19	---	5.1-6.0	0	0	0	0
	6-11	8-15	5.0-15	---	5.1-6.0	0	0	0	0
	11-26	10-15	5.0-15	---	5.1-6.0	0	0	0	0
	26-33	13-18	5.0-15	---	5.1-6.0	0	0	0	0
	33-60	13-18	5.0-15	---	5.1-6.0	0	0	0	0
Morscour -----	0-2	12-18	9.0-19	---	5.6-7.3	0	0	0	0
	2-7	12-18	9.0-19	---	5.6-7.3	0	0	0	0
	7-14	---	---	---	---	---	---	---	---
	14-24	---	---	---	---	---	---	---	---
172: Stumpatil -----	0-6	8-15	9.0-19	---	5.1-6.0	0	0	0	0
	6-11	8-15	5.0-15	---	5.1-6.0	0	0	0	0
	11-26	10-15	5.0-15	---	5.1-6.0	0	0	0	0
	26-33	13-18	5.0-15	---	5.1-6.0	0	0	0	0
	33-60	13-18	5.0-15	---	5.1-6.0	0	0	0	0
173: Stumpatil -----	0-6	8-15	9.0-19	---	5.1-6.0	0	0	0	0
	6-11	8-15	5.0-15	---	5.1-6.0	0	0	0	0
	11-26	10-15	5.0-15	---	5.1-6.0	0	0	0	0
	26-33	13-18	5.0-15	---	5.1-6.0	0	0	0	0
	33-60	13-18	5.0-15	---	5.1-6.0	0	0	0	0
174: Stumpatil -----	0-6	8-15	9.0-19	---	5.1-6.0	0	0	0	0
	6-11	8-15	5.0-15	---	5.1-6.0	0	0	0	0
	11-26	10-15	5.0-15	---	5.1-6.0	0	0	0	0
	26-33	13-18	5.0-15	---	5.1-6.0	0	0	0	0
	33-60	13-18	5.0-15	---	5.1-6.0	0	0	0	0
Sonorapass -----	0-8	8-15	5.0-15	---	5.6-6.5	0	0	0	0
	8-17	10-18	6.0-12	---	5.1-6.0	0	0	0	0
	17-21	10-18	6.0-12	---	5.1-6.0	0	0	0	0
	21-31	---	---	---	---	---	---	---	---
Snowtell -----	0-3	8-15	---	---	4.5-5.5	0	0	0	0
	3-10	8-15	---	---	4.5-5.5	0	0	0	0
	10-20	---	---	---	---	---	---	---	---
180: Shalgran -----	0-3	2-8	2.0-10	---	5.1-6.5	0	0	0	0
	3-14	3-10	5.0-20	---	5.1-6.5	0	0	0	0
	14-24	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
190:									
Hopeval -----	0-2	10-18	13-26	---	5.6-6.5	0	0	0	0
	2-12	10-18	13-26	---	5.6-6.5	0	0	0	0
	12-15	10-18	11-20	---	5.6-6.5	0	0	0	0
	15-26	8-18	9.0-18	---	5.6-6.5	0	0	0	0
	26-33	8-18	6.0-12	---	5.6-6.5	0	0	0	0
	33-60	5-15	3.0-8.0	---	5.6-6.5	0	0	0	0
Hopeval -----	0-5	10-18	30-50	---	5.6-6.5	0	0	0	0
	5-12	10-18	13-26	---	5.6-6.5	0	0	0	0
	12-15	10-18	11-20	---	5.6-6.5	0	0	0	0
	15-26	8-18	9.0-18	---	5.6-6.5	0	0	0	0
	26-33	8-18	6.0-12	---	5.6-6.5	0	0	0	0
	33-60	5-15	3.0-8.0	---	5.6-6.5	0	0	0	0
200:									
Cavebear -----	0-4	10-18	16-20	---	5.6-6.5	0	0	0	0
	4-20	10-18	16-20	---	5.6-6.5	0	0	0	0
	20-60	3-10	1.0-5.0	---	5.6-6.5	0	0	0	0
Hopeval -----	0-2	10-18	13-26	---	5.6-6.5	0	0	0	0
	2-12	10-18	13-26	---	5.6-6.5	0	0	0	0
	12-15	10-18	11-20	---	5.6-6.5	0	0	0	0
	15-26	8-18	9.0-18	---	5.6-6.5	0	0	0	0
	26-33	8-18	6.0-12	---	5.6-6.5	0	0	0	0
	33-60	5-15	3.0-8.0	---	5.6-6.5	0	0	0	0
Hopeval -----	0-5	10-18	30-50	---	5.6-6.5	0	0	0	0
	5-12	10-18	13-26	---	5.6-6.5	0	0	0	0
	12-15	10-18	11-20	---	5.6-6.5	0	0	0	0
	15-26	8-18	9.0-18	---	5.6-6.5	0	0	0	0
	26-33	8-18	6.0-12	---	5.6-6.5	0	0	0	0
	33-60	5-15	3.0-8.0	---	5.6-6.5	0	0	0	0
210:									
Waterpeak -----	0-5	2-8	5.0-15	---	6.1-7.3	0	0	0	0
	5-18	2-8	5.0-15	---	6.1-7.3	0	0	0	0
	18-27	4-8	5.0-15	---	6.1-7.3	0	0	0	0
	27-60	10-15	10-16	---	6.1-7.3	0	0	0	0
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
211:									
Waterpeak -----	0-5	2-8	5.0-15	---	6.1-7.3	0	0	0	0
	5-18	2-8	5.0-15	---	6.1-7.3	0	0	0	0
	18-27	4-8	5.0-15	---	6.1-7.3	0	0	0	0
	27-60	10-15	10-16	---	6.1-7.3	0	0	0	0

TABLE 25.-- Chemical Properties of the Soils

[illegible]

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
Alpineco -----	0-3	10-18	9.0-15	---	5.6-6.5	0	0	0	0
	3-12	10-18	9.0-15	---	5.6-6.5	0	0	0	0
	12-22	10-18	9.0-15	---	5.6-6.5	0	0	0	0
	22-27	10-18	9.0-15	---	5.6-6.5	0	0	0	0
	27-49	12-18	9.0-15	---	5.6-6.5	0	0	0	0
	49-59	---	---	---	---	---	---	---	---
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
222: Hardtil -----	0-3	2-8	5.0-15	---	5.6-6.5	0	0	0	0
	3-7	8-15	5.0-15	---	5.6-6.5	0	0	0	0
	7-18	8-15	5.0-15	---	5.6-6.5	0	0	0	0
	18-28	---	---	---	---	---	---	---	---
Alpineco -----	0-3	10-18	9.0-15	---	5.6-6.5	0	0	0	0
	3-12	10-18	9.0-15	---	5.6-6.5	0	0	0	0
	12-22	10-18	9.0-15	---	5.6-6.5	0	0	0	0
	22-27	10-18	9.0-15	---	5.6-6.5	0	0	0	0
	27-49	12-18	9.0-15	---	5.6-6.5	0	0	0	0
	49-59	---	---	---	---	---	---	---	---
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
230: Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---
Thieftridge -----	0-1	---	---	---	5.6-6.5	0	0	0	0
	1-4	6-18	20-40	---	5.6-7.3	0	0	0	0
	4-8	6-18	20-40	---	5.6-7.3	0	0	0	0
	8-12	6-18	20-40	---	5.6-7.3	0	0	0	0
	12-17	18-25	5.0-15	---	5.6-7.3	0	0	0	0
	17-27	---	---	---	---	---	---	---	---
Angelwhine -----	0-15	10-18	12-20	---	6.1-7.3	0	0	0	0
	15-23	12-18	10-16	---	6.1-7.3	0	0	0	0
	23-43	18-25	17-27	---	6.1-7.3	0	0	0	0
	43-60	15-20	17-25	---	6.1-7.3	0	0	0	0
231: Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---
232: Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---
Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---
Hawkridge -----	0-1	10-18	14-22	---	6.1-7.3	0	0	0	0
	1-7	10-18	14-22	---	6.1-7.3	0	0	0	0
	7-14	18-27	17-27	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
233: Angelwhine -----	0-15	10-18	12-20	---	6.1-7.3	0	0	0	0
	15-23	12-18	10-16	---	6.1-7.3	0	0	0	0
	23-43	18-25	17-27	---	6.1-7.3	0	0	0	0
	43-60	15-20	17-25	---	6.1-7.3	0	0	0	0
Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---
Hawkridge -----	0-1	10-18	14-22	---	6.1-7.3	0	0	0	0
	1-7	10-18	14-22	---	6.1-7.3	0	0	0	0
	7-14	18-27	17-27	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
234: Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---
Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
Thiefridge -----	0-1	---	---	---	5.6-6.5	0	0	0	0
	1-4	6-18	20-40	---	5.6-7.3	0	0	0	0
	4-8	6-18	20-40	---	5.6-7.3	0	0	0	0
	8-12	6-18	20-40	---	5.6-7.3	0	0	0	0
	12-17	18-25	5.0-15	---	5.6-7.3	0	0	0	0
	17-27	---	---	---	---	---	---	---	---
235: Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---
Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---
Angelwhine -----	0-15	10-18	12-20	---	6.1-7.3	0	0	0	0
	15-23	12-18	10-16	---	6.1-7.3	0	0	0	0
	23-43	18-25	17-27	---	6.1-7.3	0	0	0	0
	43-60	15-20	17-25	---	6.1-7.3	0	0	0	0
240: Granylith -----	0-1	3-10	4.0-10	---	5.6-6.5	0	0	0	0
	1-4	3-10	4.0-10	---	5.6-6.5	0	0	0	0
	4-12	3-10	3.0-9.0	---	5.6-6.5	0	0	0	0
	12-15	3-10	3.0-9.0	---	5.6-6.5	0	0	0	0
	15-25	---	---	---	---	---	---	---	---
Hargran -----	0-1	---	---	---	---	0	0	0	0
	1-9	10-18	---	6-10	4.5-5.5	0	0	0	0
	9-24	10-18	---	6-10	4.5-5.5	0	0	0	0
	24-36	10-18	---	6-10	4.5-5.5	0	0	0	0
	36-39	10-18	---	5-10	4.5-5.5	0	0	0	0
	39-49	---	---	---	---	---	---	---	---
Rock Outcrop -----	---	---	---	---	---	---	---	---	
250: Florand -----	0-1	10-18	20-40	---	5.1-6.0	0	0	0	0
	1-4	10-18	---	---	4.5-6.0	0	0	0	0
	4-12	10-18	---	---	4.5-6.0	0	0	0	0
	12-18	10-18	---	---	4.5-6.0	0	0	0	0
	18-28	12-20	7.0-13	---	5.1-6.0	0	0	0	0
	28-38	12-20	7.0-13	---	5.1-6.0	0	0	0	0
	38-47	12-20	6.0-12	---	5.1-6.0	0	0	0	0
	47-57	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	ds/m	
Lostridge -----	0-3	10-18	---	---	4.5-5.5	0	0	0	0
	3-11	10-18	---	---	4.5-5.5	0	0	0	0
	11-23	12-18	---	---	4.5-5.5	0	0	0	0
	23-29	10-18	---	---	4.5-5.5	0	0	0	0
	29-39	---	---	---	---	---	---	---	---
Fishsnooze -----	0-1	10-18	---	---	4.5-5.5	0	0	0	0
	1-9	10-18	---	---	4.5-5.5	0	0	0	0
	9-13	10-18	---	---	4.5-5.5	0	0	0	0
	13-35	12-18	---	---	4.5-5.5	0	0	0	0
	35-45	---	---	---	---	---	---	---	---
260: Hawkridge -----	0-1	10-18	12-20	---	6.1-7.3	0	0	0	0
	1-7	10-18	14-22	---	6.1-7.3	0	0	0	0
	7-14	18-27	17-27	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---
Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---
261: Hawkridge -----	0-1	10-18	14-22	---	6.1-7.3	0	0	0	0
	1-7	10-18	14-22	---	6.1-7.3	0	0	0	0
	7-14	18-27	17-27	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
Lithnip -----	0-1	10-18	9.0-16	---	6.1-7.3	0	0	0	0
	1-5	12-18	9.0-16	---	6.1-7.3	0	0	0	0
	5-15	---	---	---	---	---	---	---	---
Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---
262: Domehill -----	0-2	8-18	10-24	---	6.1-7.3	0	0	0	0
	2-8	18-25	17-27	---	6.1-7.3	0	0	0	0
	8-13	24-30	17-27	---	6.1-7.3	0	0	0	0
	13-23	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
Kiote -----	0-10	10-18	15-25	---	6.6-7.3	0	0	0	0
	10-17	10-18	10-20	---	6.6-7.3	0	0	0	0
	17-30	18-25	15-20	---	6.6-7.3	0	0	0	0
	30-60	10-25	5.0-20	---	6.6-7.3	0	0	0	0
270: Duco -----	0-3	10-20	10-20	---	6.1-7.3	0	0	0	0
	3-5	10-20	16-24	---	6.1-7.3	0	0	0	0
	5-18	27-35	20-30	---	6.1-7.3	0	0	0	0
	18-28	---	---	---	---	---	---	---	---
Smallcone -----	0-3	5-18	---	1-6	4.5-6.0	0	0	0	0
	3-6	5-18	---	1-6	4.5-6.0	0	0	0	0
	6-16	---	---	---	---	---	---	---	---
Cagle -----	0-4	27-35	25-35	---	6.1-7.3	0	0	0	0
	4-12	35-50	30-45	---	6.1-7.3	0	0	0	0
	12-28	35-50	30-45	---	6.1-7.3	0	0	0	0
	28-38	---	---	---	---	---	---	---	---
271: Duco -----	0-3	10-20	10-20	---	6.1-7.3	0	0	0	0
	3-5	10-20	16-24	---	6.1-7.3	0	0	0	0
	5-18	27-35	20-30	---	6.1-7.3	0	0	0	0
	18-28	---	---	---	---	---	---	---	---
Vetagrande -----	0-3	10-15	12-18	---	6.1-7.3	0	0	0	0
	3-9	10-15	12-18	---	6.1-7.3	0	0	0	0
	9-25	18-27	16-26	---	6.1-7.3	0	0	0	0
	25-60	18-27	15-25	---	6.1-7.3	0	0	0	0
Pinenut -----	0-1	10-15	10-18	---	6.1-7.3	0	0	0	0
	1-6	10-18	10-18	---	6.1-7.3	0	0	0	0
	6-19	18-27	15-25	---	6.1-7.3	0	0	0	0
	19-29	---	---	---	---	---	---	---	---
280: Longcreek -----	0-3	20-27	15-20	---	6.6-7.3	0	0	0	0
	3-6	35-40	30-38	---	6.6-7.3	0	0	0	0
	6-14	40-50	32-42	---	6.6-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
Devada -----	0-4	15-27	20-30	---	6.1-7.3	0	0	0	0
	4-5	27-40	20-30	---	6.1-7.3	0	0	0	0
	5-13	40-60	32-48	---	6.1-7.3	0	0	0	0
	13-23	---	---	---	---	---	---	---	---
290: Pernty -----	0-5	18-25	15-20	---	6.6-7.3	0	0	0	0
	5-15	25-35	15-25	---	6.6-7.3	0	0	0	0
	15-25	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

[illegible]

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
Aspocket -----	0-13	10-18	13-25	---	6.1-7.3	0	0	0	0
	13-38	18-27	15-25	---	6.1-7.3	0	0	0	0
	38-54	25-35	21-30	---	6.1-7.3	0	0	0	0
	54-64	---	---	---	---	---	---	---	---
350: Leroman -----	0-5	8-18	10-24	---	6.1-7.3	0	0	0	0
	5-23	18-27	17-27	---	6.1-7.3	0	0	0	0
	23-34	18-27	17-27	---	6.1-7.3	0	0	0	0
	34-43	---	---	---	---	---	---	---	---
	43-53	---	---	---	---	---	---	---	---
Chenhigh -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-6	30-45	25-35	---	6.1-7.3	0	0	0	0
	6-10	35-50	25-35	---	6.1-7.3	0	0	0	0
	10-18	35-50	25-35	---	6.1-7.3	0	0	0	0
	18-28	---	---	---	---	---	---	---	---
Celeridge -----	0-3	8-18	16-30	---	6.1-7.3	0	0	0	0
	3-8	8-18	16-30	---	6.1-7.3	0	0	0	0
	8-19	18-27	17-27	---	6.1-7.3	0	0	0	0
	19-29	---	---	---	---	---	---	---	---
Dogbed -----	0-14	8-18	10-24	---	6.1-7.3	0	0	0	0
	14-50	18-27	17-27	---	6.1-7.3	0	0	0	0
	50-60	15-25	14-24	---	6.1-7.3	0	0	0	0
360: Monibasin -----	0-15	10-18	13-25	---	6.1-7.3	0	0	0	0
	15-34	18-25	16-30	---	6.1-7.3	0	0	0	0
	34-60	18-25	16-30	---	6.1-7.3	0	0	0	0
Vermdig -----	0-2	10-18	8.0-16	---	5.6-6.5	0	0	0	0
	2-13	18-25	10-25	---	5.6-6.5	0	0	0	0
	13-32	18-27	10-25	---	5.6-6.5	0	0	0	0
	32-60	25-35	10-25	---	5.6-6.5	0	0	0	0
370: Celeridge -----	0-3	8-18	16-30	---	6.1-7.3	0	0	0	0
	3-8	8-18	16-30	---	6.1-7.3	0	0	0	0
	8-19	18-27	17-27	---	6.1-7.3	0	0	0	0
	19-29	---	---	---	---	---	---	---	---
Gerdog -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-11	18-27	17-27	---	6.1-7.3	0	0	0	0
	11-21	---	---	---	---	---	---	---	---
Loope -----	0-1	8-18	10-24	---	6.1-7.3	0	0	0	0
	1-14	18-27	17-27	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	ds/m	
Pinew -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-8	18-25	17-27	---	6.1-7.3	0	0	0	0
	8-15	25-35	17-27	---	6.1-7.3	0	0	0	0
	15-25	---	---	---	---	---	---	---	---
380: Joecut -----	0-1	---	---	---	5.1-6.5	0	0	0	0
	1-2	10-18	10-24	---	5.6-6.5	0	0	0	0
	2-14	10-18	10-24	---	5.6-6.5	0	0	0	0
	14-40	25-35	15-25	---	5.6-6.5	0	0	0	0
	40-60	25-35	15-25	---	5.6-6.5	0	0	0	0
Celeridge -----	0-3	8-18	16-30	---	6.1-7.3	0	0	0	0
	3-8	8-18	16-30	---	6.1-7.3	0	0	0	0
	8-19	18-27	17-27	---	6.1-7.3	0	0	0	0
	19-29	---	---	---	---	---	---	---	---
Joecut -----	0-1	---	---	---	---	0	0	0	0
	1-2	10-18	20-40	---	5.6-6.5	0	0	0	0
	2-14	10-18	16-32	---	5.6-6.5	0	0	0	0
	14-40	25-35	15-25	---	5.6-6.5	0	0	0	0
	40-60	25-35	15-25	---	5.6-6.5	0	0	0	0
Gerdog -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-11	18-27	17-27	---	6.1-7.3	0	0	0	0
	11-21	---	---	---	---	---	---	---	---
381: Heenlake -----	0-6	8-18	10-24	---	6.1-7.3	0	0	0	0
	6-18	25-30	15-25	---	6.1-7.3	0	0	0	0
	18-22	25-35	17-27	---	6.1-7.3	0	0	0	0
	22-32	---	---	---	---	---	---	---	---
Loope -----	0-1	8-18	10-24	---	6.1-7.3	0	0	0	0
	1-14	18-27	17-27	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
Joecut -----	0-2	10-18	10-24	---	5.6-6.5	0	0	0	0
	2-14	10-18	10-24	---	5.6-6.5	0	0	0	0
	14-40	25-35	15-25	---	5.6-6.5	0	0	0	0
	40-60	25-35	15-25	---	5.6-6.5	0	0	0	0
Joecut -----	0-1	---	---	---	---	0	0	0	0
	1-2	10-18	20-40	---	5.6-6.5	0	0	0	0
	2-14	10-18	16-32	---	5.6-6.5	0	0	0	0
	14-40	25-35	15-25	---	5.6-6.5	0	0	0	0
	40-60	25-35	15-25	---	5.6-6.5	0	0	0	0

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
382: Joecut -----	0-2	10-18	10-24	---	5.6-6.5	0	0	0	0
	2-14	10-18	10-24	---	5.6-6.5	0	0	0	0
	14-40	25-35	15-25	---	5.6-6.5	0	0	0	0
	40-60	25-35	15-25	---	5.6-6.5	0	0	0	0
Joecut -----	0-1	---	---	---	---	0	0	0	0
	1-2	10-18	20-40	---	5.6-6.5	0	0	0	0
	2-14	10-18	16-32	---	5.6-6.5	0	0	0	0
	14-40	25-35	15-25	---	5.6-6.5	0	0	0	0
	40-60	25-35	15-25	---	5.6-6.5	0	0	0	0
390: Heenlake -----	0-6	10-20	10-25	---	6.1-7.3	0	0	0	0
	6-18	25-30	15-25	---	6.1-7.3	0	0	0	0
	18-22	25-35	17-27	---	6.1-7.3	0	0	0	0
	22-32	---	---	---	---	---	---	---	---
Loope -----	0-1	8-18	10-24	---	6.1-7.3	0	0	0	0
	1-14	18-27	17-27	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
Chenhigh -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-6	30-45	25-35	---	6.1-7.3	0	0	0	0
	6-10	35-50	25-35	---	6.1-7.3	0	0	0	0
	10-18	35-50	25-35	---	6.1-7.3	0	0	0	0
	18-28	---	---	---	---	---	---	---	---
391: Heenlake -----	0-6	8-18	10-24	---	6.1-7.3	0	0	0	0
	6-18	25-30	15-25	---	6.1-7.3	0	0	0	0
	18-22	25-35	17-27	---	6.1-7.3	0	0	0	0
	22-32	---	---	---	---	---	---	---	---
Loope -----	0-1	8-18	10-24	---	6.1-7.3	0	0	0	0
	1-14	18-27	17-27	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
Dogbed -----	0-14	8-18	10-24	---	6.1-7.3	0	0	0	0
	14-50	18-27	17-27	---	6.1-7.3	0	0	0	0
	50-60	15-25	14-24	---	6.1-7.3	0	0	0	0
392: Heenlake -----	0-6	8-18	10-24	---	6.1-7.3	0	0	0	0
	6-18	25-30	15-25	---	6.1-7.3	0	0	0	0
	18-22	25-35	17-27	---	6.1-7.3	0	0	0	0
	22-32	---	---	---	---	---	---	---	---
Loope -----	0-1	8-18	10-24	---	6.1-7.3	0	0	0	0
	1-14	18-27	17-27	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

[illegible]

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
440: Dogbed -----	0-14	8-18	10-24	---	6.1-7.3	0	0	0	0
	14-50	18-27	17-27	---	6.1-7.3	0	0	0	0
	50-60	15-25	14-24	---	6.1-7.3	0	0	0	0
Celeridge -----	0-3	8-18	16-30	---	6.1-7.3	0	0	0	0
	3-8	8-18	16-30	---	6.1-7.3	0	0	0	0
	8-19	18-27	17-27	---	6.1-7.3	0	0	0	0
	19-29	---	---	---	---	---	---	---	---
Carshal -----	0-2	8-18	10-24	---	6.1-7.3	0	0	0	0
	2-5	18-27	17-27	---	6.1-7.3	0	0	0	0
	5-14	---	---	---	---	---	---	---	---
	14-24	---	---	---	---	---	---	---	---
Joecut -----	0-1	---	---	---	---	0	0	0	0
	1-2	10-18	20-40	---	5.6-6.5	0	0	0	0
	2-14	10-18	16-32	---	5.6-6.5	0	0	0	0
	14-40	25-35	15-25	---	5.6-6.5	0	0	0	0
	40-60	25-35	15-25	---	5.6-6.5	0	0	0	0
450: Carshal -----	0-2	8-18	10-24	---	6.1-7.3	0	0	0	0
	2-5	18-27	17-27	---	6.1-7.3	0	0	0	0
	5-14	---	---	---	---	---	---	---	---
	14-24	---	---	---	---	---	---	---	---
Loope -----	0-1	8-18	10-24	---	6.1-7.3	0	0	0	0
	1-14	18-27	17-27	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
460: Toejom -----	0-9	3-8	2.0-10	---	6.1-7.3	0	0	0	0
	9-14	3-8	2.0-10	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
Pimogran -----	0-10	3-8	2.0-10	---	6.1-7.3	0	0	0	0
	10-18	3-8	2.0-10	---	6.1-7.3	0	0	0	0
	18-28	---	---	---	---	---	---	---	---
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
461: Toejom -----	0-9	3-8	2.0-10	---	6.1-7.3	0	0	0	0
	9-14	3-8	2.0-10	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
Pimogran -----	0-10	3-8	2.0-10	---	6.1-7.3	0	0	0	0
	10-18	3-8	2.0-10	---	6.1-7.3	0	0	0	0
	18-28	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	ds/m	
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
462: Toejom -----	0-9	3-8	2.0-10	---	6.1-7.3	0	0	0	0
	9-14	3-8	2.0-10	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
Glenbrook -----	0-5	0-8	1.0-5.0	---	6.1-7.3	0	0	0	0
	5-14	0-8	1.0-5.0	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
Pimogran -----	0-10	3-8	2.0-10	---	6.1-7.3	0	0	0	0
	10-18	3-8	2.0-10	---	6.1-7.3	0	0	0	0
	18-28	---	---	---	---	---	---	---	---
470: Sumeadow -----	0-0	---	---	---	5.1-6.0	0	0	0	0
	0-2	10-18	20-40	---	5.1-6.0	0	0	0	0
	2-13	10-18	9.0-16	---	5.1-6.0	0	0	0	0
	13-65	10-18	9.0-18	---	5.1-6.0	0	0	0	0
Lostridge -----	0-3	10-18	---	---	4.5-5.5	0	0	0	0
	3-11	10-18	---	---	4.5-5.5	0	0	0	0
	11-23	12-18	---	---	4.5-5.5	0	0	0	0
	23-29	10-18	---	---	4.5-5.5	0	0	0	0
	29-39	---	---	---	---	---	---	---	---
471: Sumeadow -----	0-0	---	---	---	5.1-6.0	0	0	0	0
	0-2	10-18	20-40	---	5.1-6.0	0	0	0	0
	2-13	10-18	9.0-16	---	5.1-6.0	0	0	0	0
	13-65	10-18	9.0-18	---	5.1-6.0	0	0	0	0
Sumeadow -----	0-0	---	---	---	5.1-6.0	0	0	0	0
	0-2	10-18	20-40	---	5.1-6.0	0	0	0	0
	2-13	10-18	9.0-16	---	5.1-6.0	0	0	0	0
	13-65	10-18	9.0-18	---	5.1-6.0	0	0	0	0
480: Aspetill -----	0-5	8-18	10-24	---	6.1-7.3	0	0	0	0
	5-26	18-25	17-27	---	6.1-7.3	0	0	0	0
	26-60	15-25	17-27	---	6.1-7.3	0	0	0	0
Aspetill -----	0-5	8-18	10-24	---	6.1-7.3	0	0	0	0
	5-26	18-25	17-27	---	6.1-7.3	0	0	0	0
	26-60	15-25	17-27	---	6.1-7.3	0	0	0	0
481: Aspetill -----	0-5	8-18	10-24	---	6.1-7.3	0	0	0	0
	5-26	18-25	17-27	---	6.1-7.3	0	0	0	0
	26-60	15-25	17-27	---	6.1-7.3	0	0	0	0

TABLE 25.-- Chemical Properties of the Soils

[illegible]

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
Fishsnooze -----	0-1	10-18	---	---	4.5-5.5	0	0	0	0
	1-9	10-18	---	---	4.5-5.5	0	0	0	0
	9-13	10-18	---	---	4.5-5.5	0	0	0	0
	13-35	12-18	---	---	4.5-5.5	0	0	0	0
	35-45	---	---	---	---	---	---	---	---
511: Rock Outcrop -----	---	---	---	---	---	---	---	---	---
Snowtell -----	0-3	8-15	---	---	4.5-5.5	0	0	0	0
	3-10	8-15	---	---	4.5-5.5	0	0	0	0
	10-20	---	---	---	---	---	---	---	---
Forsell -----	0-1	8-15	20-40	---	5.1-6.0	0	0	0	0
	1-11	8-15	15-28	---	5.1-6.0	0	0	0	0
	11-27	8-15	12-16	---	5.1-6.0	0	0	0	0
	27-60	8-15	12-16	---	5.1-6.0	0	0	0	0
512: Rock Outcrop -----	---	---	---	---	---	---	---	---	---
Snowtell -----	0-3	8-15	---	---	4.5-5.5	0	0	0	0
	3-10	8-15	---	---	4.5-5.5	0	0	0	0
	10-20	---	---	---	---	---	---	---	---
513: Rubble Land -----	---	---	---	---	---	---	---	---	---
Holdon -----	0-3	3-10	4.0-10	---	6.1-7.3	0	0	0	0
	3-23	8-15	9.0-16	---	6.1-7.3	0	0	0	0
	23-47	---	---	---	---	---	---	---	---
	47-57	---	---	---	---	---	---	---	---
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
520: Canfire -----	0-2	8-18	10-24	---	6.1-7.3	0	0	0	0
	2-7	18-25	17-27	---	6.1-7.3	0	0	0	0
	7-17	18-25	17-27	---	6.1-7.3	0	0	0	0
	17-27	---	---	---	---	---	---	---	---
Crispy -----	0-7	8-18	10-24	---	6.1-7.3	0	0	0	0
	7-15	18-25	17-27	---	6.1-7.3	0	0	0	0
	15-25	---	---	---	---	---	---	---	---
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
530: Elaero -----	0-6	4-10	2.0-10	---	6.1-7.3	0	0	0	0
	6-16	12-18	5.0-15	---	6.1-7.3	0	0	0	0
	16-21	12-18	5.0-15	---	6.1-7.3	0	0	0	0
	21-31	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
Lockgate -----	0-14	4-10	2.0-10	---	6.1-7.3	0	0	0	0
	14-23	12-18	5.0-15	---	6.1-7.3	0	0	0	0
	23-34	12-18	5.0-15	---	6.1-7.3	0	0	0	0
	34-42	3-8	0.0-10	---	6.1-7.3	0	0	0	0
	42-52	---	---	---	---	---	---	---	---
Granhogany -----	0-4	4-10	2.0-10	---	6.1-7.3	0	0	0	0
	4-15	3-8	0.0-10	---	6.1-7.3	0	0	0	0
	15-25	---	---	---	---	---	---	---	---
Granidry -----	0-3	8-15	15-28	---	6.1-7.3	0	0	0	0
	3-11	10-18	5.0-15	---	6.1-7.3	0	0	0	0
	11-16	15-25	17-27	---	6.1-7.3	0	0	0	0
	16-26	---	---	---	---	---	---	---	---
531: Elaero -----	0-6	8-15	15-28	---	6.1-7.3	0	0	0	0
	6-16	12-18	5.0-15	---	6.1-7.3	0	0	0	0
	16-21	12-18	5.0-15	---	6.1-7.3	0	0	0	0
	21-31	---	---	---	---	---	---	---	---
Elaero -----	0-6	4-10	2.0-10	---	6.1-7.3	0	0	0	0
	6-16	12-18	5.0-15	---	6.1-7.3	0	0	0	0
	16-21	12-18	5.0-15	---	6.1-7.3	0	0	0	0
	21-31	---	---	---	---	---	---	---	---
532: Elaero -----	0-6	4-10	2.0-10	---	6.1-7.3	0	0	0	0
	6-16	12-18	5.0-15	---	6.1-7.3	0	0	0	0
	16-21	12-18	5.0-15	---	6.1-7.3	0	0	0	0
	21-31	---	---	---	---	---	---	---	---
Granidry -----	0-3	8-15	15-28	---	6.1-7.3	0	0	0	0
	3-11	10-18	5.0-15	---	6.1-7.3	0	0	0	0
	11-16	15-25	17-27	---	6.1-7.3	0	0	0	0
	16-26	---	---	---	---	---	---	---	---
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
540: Lostcannon moist-----	0-18	8-12	15-28	---	6.1-7.3	0	0	0	0
	18-25	10-18	5.0-15	---	6.1-7.3	0	0	0	0
	25-36	10-18	5.0-15	---	6.1-7.3	0	0	0	0
	36-60	10-18	5.0-15	---	6.1-7.3	0	0	0	0
Lostcannon -----	0-18	8-12	15-28	---	6.1-7.3	0	0	0	0
	18-25	10-18	5.0-15	---	6.1-7.3	0	0	0	0
	25-36	10-18	5.0-15	---	6.1-7.3	0	0	0	0
	36-60	10-18	5.0-15	---	6.1-7.3	0	0	0	0

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
560:									
Dunderberg -----	0-5	8-15	10-24	---	6.1-7.3	0	0	0	0
	5-9	8-15	10-24	---	6.1-7.3	0	0	0	0
	9-28	8-15	10-24	---	6.1-7.3	0	0	0	0
	28-39	8-18	10-24	---	6.1-7.3	0	0	0	0
	39-60	8-18	10-24	---	6.1-7.3	0	0	0	0
Dunderberg warm-----	0-5	8-15	10-24	---	6.1-7.3	0	0	0	0
	5-9	8-15	10-24	---	6.1-7.3	0	0	0	0
	9-28	8-15	10-24	---	6.1-7.3	0	0	0	0
	28-39	8-18	10-24	---	6.1-7.3	0	0	0	0
	39-60	8-18	10-24	---	6.1-7.3	0	0	0	0
Conwayridge -----	0-4	8-15	10-24	---	6.1-7.3	0	0	0	0
	4-11	10-18	10-24	---	6.1-7.3	0	0	0	0
	11-63	8-15	10-24	---	6.1-7.3	0	0	0	0
Dunderberg moist-----	0-5	8-15	10-24	---	6.1-7.3	0	0	0	0
	5-9	8-15	10-24	---	6.1-7.3	0	0	0	0
	9-28	8-15	10-24	---	6.1-7.3	0	0	0	0
	28-39	8-18	10-24	---	6.1-7.3	0	0	0	0
	39-60	8-18	10-24	---	6.1-7.3	0	0	0	0
561:									
Dunderberg -----	0-5	8-15	10-24	---	6.1-7.3	0	0	0	0
	5-9	8-15	10-24	---	6.1-7.3	0	0	0	0
	9-28	8-15	10-24	---	6.1-7.3	0	0	0	0
	28-39	8-18	10-24	---	6.1-7.3	0	0	0	0
	39-60	8-18	10-24	---	6.1-7.3	0	0	0	0
Dunderberg warm-----	0-5	8-15	10-24	---	6.1-7.3	0	0	0	0
	5-9	8-15	10-24	---	6.1-7.3	0	0	0	0
	9-28	8-15	10-24	---	6.1-7.3	0	0	0	0
	28-39	8-18	10-24	---	6.1-7.3	0	0	0	0
	39-60	8-18	10-24	---	6.1-7.3	0	0	0	0
Dunderberg moist-----	0-5	8-15	10-24	---	6.1-7.3	0	0	0	0
	5-9	8-15	10-24	---	6.1-7.3	0	0	0	0
	9-28	8-15	10-24	---	6.1-7.3	0	0	0	0
	28-39	8-18	10-24	---	6.1-7.3	0	0	0	0
	39-60	8-18	10-24	---	6.1-7.3	0	0	0	0
570:									
Angelwhine -----	0-15	10-18	12-20	---	6.1-7.3	0	0	0	0
	15-23	12-18	10-16	---	6.1-7.3	0	0	0	0
	23-43	18-25	17-27	---	6.1-7.3	0	0	0	0
	43-60	15-20	17-25	---	6.1-7.3	0	0	0	0
Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
Hawkridge -----	0-1	10-18	12-20	---	6.1-7.3	0	0	0	0
	1-7	10-18	14-22	---	6.1-7.3	0	0	0	0
	7-14	18-27	17-27	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
580: Murain -----	0-2	8-18	15-28	---	6.1-7.3	0	0	0	0
	2-7	8-18	16-30	---	6.1-7.3	0	0	0	0
	7-18	15-25	16-30	---	6.1-7.3	0	0	0	0
	18-26	20-25	16-30	---	6.1-7.3	0	0	0	0
	26-41	18-25	16-30	---	6.1-7.3	0	0	0	0
	41-60	18-25	16-30	---	6.1-7.3	0	0	0	0
Shorthike -----	0-2	4-10	2.0-10	---	6.1-7.3	0	0	0	0
	2-10	6-12	2.0-10	---	6.1-7.3	0	0	0	0
	10-30	10-15	10-20	---	6.1-7.3	0	0	0	0
	30-60	10-15	10-20	---	6.1-7.3	0	0	0	0
Murain moist-----	0-2	8-18	15-28	---	6.1-7.3	0	0	0	0
	2-7	8-18	16-30	---	6.1-7.3	0	0	0	0
	7-18	15-25	16-30	---	6.1-7.3	0	0	0	0
	18-26	20-25	16-30	---	6.1-7.3	0	0	0	0
	26-41	18-25	16-30	---	6.1-7.3	0	0	0	0
	41-60	18-25	16-30	---	6.1-7.3	0	0	0	0
581: Murain -----	0-2	8-18	15-28	---	6.1-7.3	0	0	0	0
	2-7	8-18	16-30	---	6.1-7.3	0	0	0	0
	7-18	15-25	16-30	---	6.1-7.3	0	0	0	0
	18-26	20-25	16-30	---	6.1-7.3	0	0	0	0
	26-41	18-25	16-30	---	6.1-7.3	0	0	0	0
	41-60	18-25	16-30	---	6.1-7.3	0	0	0	0
Murain -----	0-2	8-18	16-30	---	6.1-7.3	0	0	0	0
	2-7	8-18	16-30	---	6.1-7.3	0	0	0	0
	7-18	15-25	16-30	---	6.1-7.3	0	0	0	0
	18-26	20-25	16-30	---	6.1-7.3	0	0	0	0
	26-41	18-25	16-30	---	6.1-7.3	0	0	0	0
	41-60	18-25	16-30	---	6.1-7.3	0	0	0	0
590: Loope -----	0-1	8-18	10-24	---	6.1-7.3	0	0	0	0
	1-14	18-27	17-27	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
Heenlake -----	0-6	8-18	10-24	---	6.1-7.3	0	0	0	0
	6-18	25-30	15-25	---	6.1-7.3	0	0	0	0
	18-22	25-35	17-27	---	6.1-7.3	0	0	0	0
	22-32	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

[illegible]

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	ds/m	
610: Forsell -----	0-1	8-15	20-40	---	5.1-6.0	0	0	0	0
	1-11	8-15	15-28	---	5.1-6.0	0	0	0	0
	11-27	8-15	12-16	---	5.1-6.0	0	0	0	0
	27-60	8-15	12-16	---	5.1-6.0	0	0	0	0
Snowtell -----	0-3	8-15	---	---	4.5-5.5	0	0	0	0
	3-10	8-15	---	---	4.5-5.5	0	0	0	0
	10-20	---	---	---	---	---	---	---	---
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
611: Forsell -----	0-1	8-15	20-40	---	5.1-6.0	0	0	0	0
	1-11	8-15	15-28	---	5.1-6.0	0	0	0	0
	11-27	8-15	12-16	---	5.1-6.0	0	0	0	0
	27-60	8-15	12-16	---	5.1-6.0	0	0	0	0
Snowtell -----	0-3	8-15	---	---	4.5-5.5	0	0	0	0
	3-10	8-15	---	---	4.5-5.5	0	0	0	0
	10-20	---	---	---	---	---	---	---	---
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
620: Indian Creek -----	0-1	10-20	10-20	---	6.1-7.3	0	0	0	0
	1-3	20-30	13-23	---	6.1-7.3	0	0	0	0
	3-20	35-55	25-45	---	6.1-7.8	0-1	0	0.0-2.0	0-1
	20-25	---	---	---	---	---	---	---	---
	25-60	5-20	5.0-20	---	6.6-9.0	0-5	0	0.0-4.0	0-1
630: Olac -----	0-3	8-18	10-24	---	6.1-7.8	0	0	0	0
	3-10	23-30	15-20	---	6.1-7.8	0	0	0	0
	10-20	---	---	---	---	---	---	---	---
Flex -----	0-2	8-18	10-24	---	6.1-7.3	0	0	0	0
	2-10	18-27	14-21	---	6.1-7.3	0	0	0	0
	10-20	---	---	---	---	---	---	---	---
Duco -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-5	10-20	16-24	---	6.1-7.3	0	0	0	0
	5-18	27-35	20-30	---	6.1-7.3	0	0	0	0
	18-28	---	---	---	---	---	---	---	---
640: Koontz -----	0-2	5-15	5.0-20	---	6.1-7.8	0	0	0	0
	2-12	20-35	15-30	---	6.1-7.8	0	0	0	0
	12-22	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

[illegible]

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
680: Rolldown -----	0-2	8-18	10-24	---	6.1-7.3	0	0	0	0
	2-10	8-18	10-24	---	6.1-7.3	0	0	0	0
	10-60	18-27	17-27	---	6.1-7.3	0	0	0	0
Mountpatterson -----	0-9	6-12	5.0-12	---	6.1-7.3	0	0	0	0
	9-18	18-27	17-27	---	6.1-7.3	0	0	0	0
	18-28	---	---	---	---	---	---	---	---
Rubble Land -----	---	---	---	---	---	---	---	---	---
700: Coldtree -----	0-1	3-10	---	---	4.5-6.0	0	0	0	0
	1-9	8-12	---	---	4.5-6.0	0	0	0	0
	9-24	10-16	---	---	4.5-6.0	0	0	0	0
	24-44	10-18	---	---	4.5-6.0	0	0	0	0
	44-54	---	---	---	---	---	---	---	---
Rubble Land -----	---	---	---	---	---	---	---	---	---
710: Bakscratch -----	0-7	8-12	15-28	---	6.1-7.3	0	0	0	0
	7-11	12-18	11-18	---	6.1-7.3	0	0	0	0
	11-16	12-18	11-18	---	6.1-7.3	0	0	0	0
	16-26	---	---	---	---	---	---	---	---
Grandridge -----	0-1	8-15	15-28	---	6.1-7.3	0	0	0	0
	1-10	18-25	17-27	---	6.1-7.3	0	0	0	0
	10-18	18-25	17-27	---	6.1-7.3	0	0	0	0
	18-28	---	---	---	---	---	---	---	---
McTom -----	0-2	---	---	---	---	0	0	0	0
	2-18	3-10	10-16	---	5.6-6.5	0	0	0	0
	18-34	3-8	6.0-10	---	5.6-6.5	0	0	0	0
	34-44	---	---	---	---	---	---	---	---
720: Nohelp -----	0-11	10-18	13-25	---	6.1-7.3	0	0	0	0
	11-21	35-45	25-35	---	6.1-7.3	0	0	0	0
	21-60	35-45	25-35	---	6.1-7.3	0	0	0	0
Joenchris -----	0-6	10-18	13-25	---	6.1-7.3	0	0	0	0
	6-14	35-45	25-35	---	6.1-7.3	0	0	0	0
	14-26	40-50	35-50	---	6.1-7.3	0	0	0	0
	26-60	35-50	25-35	---	6.5-7.8	1-3	0	0	0
730: Burchflat -----	0-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-21	18-27	17-27	---	6.1-7.3	0	0	0	0
	21-36	18-27	16-30	---	6.1-7.3	0	0	0	0
	36-46	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

[illegible]

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
770:									
Sweetmount -----	0-2	8-18	10-24	---	6.1-7.3	0	0	0	0
	2-16	18-27	17-27	---	6.1-7.3	0	0	0	0
	16-24	27-35	21-30	---	6.1-7.3	0	0	0	0
	24-39	27-35	21-30	---	6.1-7.3	0	0	0	0
	39-55	35-50	25-35	---	6.1-7.3	0	0	0	0
	55-65	---	---	---	---	---	---	---	---
Hawkinspeak -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-33	18-27	17-27	---	6.1-7.3	0	0	0	0
	33-43	---	---	---	---	---	---	---	---
Hawkridge -----	0-1	10-18	14-22	---	6.1-7.3	0	0	0	0
	1-7	10-18	14-22	---	6.1-7.3	0	0	0	0
	7-14	18-27	17-27	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
780:									
Granhogany -----	0-4	4-10	2.0-10	---	6.1-7.3	0	0	0	0
	4-15	3-8	0.0-10	---	6.1-7.3	0	0	0	0
	15-25	---	---	---	---	---	---	---	---
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
790:									
Dab -----	0-3	10-15	12-18	---	6.1-7.3	0	0	0	0
	3-10	10-15	12-18	---	6.1-7.3	0	0	0	0
	10-24	18-25	16-24	---	6.1-7.3	0	0	0	0
	24-60	18-25	15-21	---	6.1-7.3	0	0	0	0
Dab -----	0-3	10-15	12-18	---	6.1-7.3	0	0	0	0
	3-10	10-15	12-18	---	6.1-7.3	0	0	0	0
	10-24	18-25	16-24	---	6.1-7.3	0	0	0	0
	24-60	18-25	15-21	---	6.1-7.3	0	0	0	0
791:									
Dab -----	0-3	10-15	12-18	---	6.1-7.3	0	0	0	0
	3-12	10-15	12-18	---	6.1-7.3	0	0	0	0
	12-24	18-25	16-24	---	6.1-7.3	0	0	0	0
	24-60	18-25	15-21	---	6.1-7.3	0	0	0	0
Longday -----	0-5	8-18	10-24	---	6.1-7.3	0	0	0	0
	5-13	18-25	17-27	---	6.1-7.3	0	0	0	0
	13-60	18-25	17-27	---	6.1-7.3	0	0	0	0
Thiefridge -----	0-1	---	---	---	5.6-6.5	0	0	0	0
	1-4	6-18	20-40	---	5.6-7.3	0	0	0	0
	4-8	6-18	20-40	---	5.6-7.3	0	0	0	0
	8-12	6-18	20-40	---	5.6-7.3	0	0	0	0
	12-17	18-25	5.0-15	---	5.6-7.3	0	0	0	0
	17-27	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
792: Dab -----	0-3	10-15	12-18	---	6.1-7.3	0	0	0	0
	3-10	10-15	12-18	---	6.1-7.3	0	0	0	0
	10-24	18-25	16-24	---	6.1-7.3	0	0	0	0
	24-60	18-25	15-21	---	6.1-7.3	0	0	0	0
Aspocket -----	0-13	10-18	13-25	---	6.1-7.3	0	0	0	0
	13-38	18-27	15-25	---	6.1-7.3	0	0	0	0
	38-54	25-35	21-30	---	6.1-7.3	0	0	0	0
	54-64	---	---	---	---	---	---	---	---
Hawkridge -----	0-1	10-18	14-22	---	6.1-7.3	0	0	0	0
	1-7	10-18	14-22	---	6.1-7.3	0	0	0	0
	7-14	18-27	17-27	---	6.1-7.3	0	0	0	0
	14-24	---	---	---	---	---	---	---	---
800: Grandridge -----	0-1	8-15	15-28	---	6.1-7.3	0	0	0	0
	1-10	18-25	17-27	---	6.1-7.3	0	0	0	0
	10-18	18-25	17-27	---	6.1-7.3	0	0	0	0
	18-28	---	---	---	---	---	---	---	---
Delhew -----	0-16	4-9	10-18	---	6.1-7.3	0	0	0	0
	16-27	14-18	8.0-15	---	6.1-7.3	0	0	0	0
	27-40	14-18	13-17	---	6.1-7.3	0	0	0	0
	40-60	8-12	7.0-11	---	6.1-7.3	0	0	0	0
801: Grandridge -----	0-1	8-15	15-28	---	6.1-7.3	0	0	0	0
	1-10	18-25	17-27	---	6.1-7.3	0	0	0	0
	10-18	18-25	17-27	---	6.1-7.3	0	0	0	0
	18-28	---	---	---	---	---	---	---	---
Delhew -----	0-16	4-9	10-18	---	6.1-7.3	0	0	0	0
	16-27	14-18	8.0-15	---	6.1-7.3	0	0	0	0
	27-40	14-18	13-17	---	6.1-7.3	0	0	0	0
	40-60	8-12	7.0-11	---	6.1-7.3	0	0	0	0
Bullville -----	0-10	10-15	12-18	0-0	6.1-7.3	0	0	0	0
	10-15	18-25	15-24	0-0	6.1-7.3	0	0	0	0
	15-30	18-25	15-24	0-0	6.1-7.3	0	0	0	0
	30-40	---	---	---	---	---	---	---	---
810: Corbett -----	0-9	2-4	2.0-10	---	5.6-6.5	0	0	0	0
	9-23	0-5	1.0-5.0	---	5.6-6.5	0	0	0	0
	23-33	---	---	---	---	---	---	---	---
Toiyabe -----	0-9	2-4	2.0-10	---	5.6-7.3	0	0	0	0
	9-16	2-4	1.0-5.0	---	5.6-7.3	0	0	0	0
	16-26	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
820:									
Freelpeak -----	0-2	0-1	0.0-0.5	---	---	0	0	0	0
	2-4	0-6	0.0-1.9	---	5.1-6.0	0	0	0	0
	4-8	0-6	0.0-2.2	---	5.1-6.0	0	0	0	0
	8-36	0-6	0.0-2.9	---	5.1-6.0	0	0	0	0
	36-46	---	---	---	---	0	0	0	0
Windyridge -----	0-2	4-10	---	2-6	4.5-6.0	0	0	0	0
	2-10	4-10	---	0-3	4.5-6.0	0	0	0	0
	10-20	---	---	---	---	---	---	---	---
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
830:									
Windyridge -----	0-2	4-10	---	2-6	4.5-6.0	0	0	0	0
	2-10	4-10	---	0-3	4.5-6.0	0	0	0	0
	10-20	---	---	---	---	---	---	---	---
Freelpeak -----	0-2	0-1	0.0-0.5	---	---	0	0	0	0
	2-4	0-6	0.0-1.9	---	5.1-6.0	0	0	0	0
	4-8	0-6	0.0-2.2	---	5.1-6.0	0	0	0	0
	8-36	0-6	0.0-2.9	---	5.1-6.0	0	0	0	0
	36-46	---	---	---	---	0	0	0	0
Rock Outcrop -----	---	---	---	---	---	---	---	---	---
840:									
Lavaspring -----	0-7	10-18	30-50	---	6.1-7.3	0	0	0	0
	7-31	14-28	20-30	---	6.1-7.3	0	0	0	0
	31-60	8-18	10-24	---	6.1-7.3	0	0	0	0
Trespass -----	0-2	10-18	13-25	---	6.1-7.3	0	0	0	0
	2-12	18-25	17-27	---	6.1-7.3	0	0	0	0
	12-35	18-25	17-27	---	6.1-7.3	0	0	0	0
	35-54	18-25	17-27	---	6.1-7.3	0	0	0	0
	54-60	8-18	9.0-16	---	6.1-7.3	0	0	0	0
Lavaspring -----	0-7	10-18	30-50	---	5.6-6.5	0	0	0	0
	7-31	14-28	20-30	---	6.1-7.3	0	0	0	0
	31-60	8-18	10-24	---	6.1-7.3	0	0	0	0
850:									
Lunder -----	0-7	8-18	10-24	---	6.6-7.8	0	0	0	0
	7-17	50-60	35-43	---	6.6-7.8	0	0	0	0
	17-33	---	---	---	---	---	---	---	---
	33-60	5-10	4.0-8.0	---	7.9-9.0	1-10	0	2.0-4.0	0

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	dS/m	
851: Lunder -----	0-7	8-18	10-24	---	6.6-7.8	0	0	0	0
	7-17	50-60	35-43	---	6.6-7.8	0	0	0	0
	17-33	---	---	---	---	---	---	---	---
	33-60	5-10	4.0-8.0	---	7.9-9.0	1-10	0	2.0-4.0	0
Leviathan -----	0-10	8-18	10-24	---	6.1-7.3	0	0	0	0
	10-60	27-35	25-30	---	6.1-7.3	0	0	0	0
860: Hardnut -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-8	18-25	17-27	---	6.1-7.3	0	0	0	0
	8-15	25-35	25-35	---	6.1-7.3	0	0	0	0
	15-25	---	---	---	---	---	---	---	---
Ocashe -----	0-3	10-18	9.0-16	---	6.1-7.3	0	0	0	0
	3-7	18-27	17-27	---	6.1-7.3	0	0	0	0
	7-13	18-27	17-27	---	6.1-7.3	0	0	0	0
	13-23	---	---	---	---	---	---	---	---
870: Epvip -----	0-4	8-18	10-24	---	6.1-7.3	0	0	0	0
	4-16	25-35	25-35	---	6.1-7.3	0	0	0	0
	16-26	---	---	---	---	---	---	---	---
Domehill -----	0-2	8-18	10-24	---	6.1-7.3	0	0	0	0
	2-8	18-25	17-27	---	6.1-7.3	0	0	0	0
	8-13	20-30	17-27	---	6.1-7.3	0	0	0	0
	13-23	---	---	---	---	---	---	---	---
Ashflat -----	0-7	10-18	13-25	---	6.1-7.3	0	0	0	0
	7-43	18-25	17-27	---	6.1-7.3	0	0	0	0
	43-60	25-35	25-35	---	6.1-7.3	0	0	0	0
871: Halfash -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-8	20-27	17-27	---	6.1-7.3	0	0	0	0
	8-17	25-35	25-35	---	6.1-7.3	0	0	0	0
	17-27	---	---	---	---	---	---	---	---
Domehill -----	0-2	8-18	10-24	---	6.1-7.3	0	0	0	0
	2-8	18-25	17-27	---	6.1-7.3	0	0	0	0
	8-13	20-30	17-27	---	6.1-7.3	0	0	0	0
	13-23	---	---	---	---	---	---	---	---
872: Epvip -----	0-4	8-18	10-24	---	6.1-7.3	0	0	0	0
	4-16	25-35	25-35	---	6.1-7.3	0	0	0	0
	16-26	---	---	---	---	---	---	---	---

TABLE 25.-- Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	meq/100g	pH	Pct	Pct	ds/m	
Vetash -----	0-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-30	18-27	17-27	---	6.1-7.3	0	0	0	0
	30-46	20-27	17-27	---	6.1-7.3	0	0	0	0
	46-60	8-18	10-24	---	6.1-7.3	0	0	0	0
Epvip -----	0-4	8-18	10-24	---	6.1-7.3	0	0	0	0
	4-16	25-35	25-35	---	6.1-7.3	0	0	0	0
	16-26	---	---	---	---	---	---	---	---
873:									
Epvip -----	0-4	8-18	10-24	---	6.1-7.3	0	0	0	0
	4-16	25-35	25-35	---	6.1-7.3	0	0	0	0
	16-26	---	---	---	---	---	---	---	---
Hardnut -----	0-3	8-18	10-24	---	6.1-7.3	0	0	0	0
	3-8	18-25	17-27	---	6.1-7.3	0	0	0	0
	8-15	25-35	25-35	---	6.1-7.3	0	0	0	0
	15-25	---	---	---	---	---	---	---	---
Vetash -----	0-9	8-18	10-24	---	6.1-7.3	0	0	0	0
	9-30	18-27	17-27	---	6.1-7.3	0	0	0	0
	30-46	20-27	17-27	---	6.1-7.3	0	0	0	0
	46-60	8-18	10-24	---	6.1-7.3	0	0	0	0
880:									
Mopana -----	0-5	8-15	10-24	---	6.6-7.3	0	0	0	0
	5-9	18-27	15-20	---	6.6-7.3	0	0	0	0
	9-19	35-50	30-50	---	6.6-7.8	0-2	0	0.0-2.0	0
	19-60	---	---	---	---	---	---	---	---
890:									
Masonic -----	0-4	8-18	10-24	---	6.1-7.3	0	0	0	0
	4-7	18-25	17-27	---	6.1-7.3	0	0	0	0
	7-10	25-35	22-30	---	6.1-7.3	0	0	0	0
	10-21	25-35	22-30	---	6.1-7.3	0	0	0	0
	21-31	---	---	---	---	---	---	---	---
Epvip -----	0-4	8-18	10-24	---	6.1-7.3	0	0	0	0
	4-16	25-35	25-35	---	6.1-7.3	0	0	0	0
	16-26	---	---	---	---	---	---	---	---
Domehill -----	0-2	8-18	10-24	---	6.1-7.3	0	0	0	0
	2-8	18-25	17-27	---	6.1-7.3	0	0	0	0
	8-13	20-30	17-27	---	6.1-7.3	0	0	0	0
	13-23	---	---	---	---	---	---	---	---
900:									
Brokenhoe -----	0-6	10-18	10-24	---	6.1-7.3	0	0	0	0
	6-10	18-25	17-27	---	6.1-7.3	0	0	0	0
	10-20	35-50	35-43	---	6.1-7.3	0	0	0	0
	20-37	---	---	---	---	---	---	---	---
	37-60	12-18	5.0-11	---	6.5-7.3	0	0	0	0

TABLE 25.-- Chemical Properties of the Soils

[illegible]

TABLE 26.-- Erosion Properties of Soils

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
100:						
Lithnip-----	0-2	.05	.28	1	8	0
	2-5	.10	.32			
	5-15	---	---			
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
Rock Outcrop-----	---	---	---	-	---	---
101:						
Lithnip, moist-----	0-1	.05	.28	1	8	0
	1-5	.10	.32			
	5-15	---	---			
Rock Outcrop-----	---	---	---	-	---	---
Fishsnooze-----	0-1	.10	.24	2	6	48
	1-9	.10	.24			
	9-13	.10	.24			
	13-35	.05	.24			
	35-45	---	---			
102:						
Lithnip-----	0-1	.05	.28	1	8	0
	1-5	.10	.32			
	5-15	---	---			
Rock Outcrop-----	---	---	---	-	---	---
Fishsnooze-----	0-1	.10	.24	2	6	48
	1-9	.10	.24			
	9-13	.10	.24			
	13-35	.05	.24			
	35-45	---	---			
103:						
Lithnip-----	0-2	.05	.28	1	8	0
	2-5	.10	.32			
	5-15	---	---			
Meiss-----	0-6	.02	.02	1	5	56
	6-13	.10	.20			
	13-23	---	---			
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
110:						
Jobsis-----	0-5	.05	.17	1	3	86
	5-9	.05	.17			
	9-17	.05	.17			
	17-20	.05	.17			
	20-30	---	---			
Whittell-----	0-0	---	---	3	2	134
	0-7	.05	.20			
	7-20	.05	.24			
	20-32	.05	.24			
	32-42	---	---			
Rock Outcrop-----	---	---	---	-	---	---

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
111: Whittell-----	0-0	---	---	3	2	134
	0-7	.05	.20			
	7-20	.05	.24			
	20-32	.05	.24			
	32-42	---	---			
Jobsis-----	0-5	.05	.17	1	3	86
	5-9	.05	.17			
	9-17	.05	.17			
	17-20	.05	.17			
	20-30	---	---			
Rock Outcrop-----	---	---	---	-	---	---
112: Jobsis-----	0-5	.05	.17	1	3	86
	5-9	.05	.17			
	9-17	.05	.17			
	17-20	.05	.17			
	20-30	---	---			
Whittell-----	0-0	---	---	3	2	134
	0-7	.05	.20			
	7-20	.05	.24			
	20-32	.05	.24			
	32-42	---	---			
Rock Outcrop-----	---	---	---	-	---	---
113: Whittell-----	0-0	---	---	3	2	134
	0-7	.05	.20			
	7-20	.05	.24			
	20-32	.05	.24			
	32-42	---	---			
Jobsis-----	0-5	.05	.17	1	3	86
	5-9	.05	.17			
	9-17	.05	.17			
	17-20	.05	.17			
	20-30	---	---			
Rock Outcrop-----	---	---	---	-	---	---
120: Toiyabe-----	0-9	.05	.17	1	3	86
	9-16	.10	.20			
	16-26	---	---			
Corbett-----	0-9	.05	.17	2	3	86
	9-23	.10	.17			
	23-33	---	---			
Rock Outcrop-----	---	---	---	-	---	---
121: Toiyabe-----	0-9	.05	.17	1	3	86
	9-16	.10	.20			
	16-26	---	---			
Corbett-----	0-9	.05	.17	2	3	86
	9-23	.10	.17			
	23-33	---	---			
Rock Outcrop-----	---	---	---	-	---	---

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
122:						
Toiyabe-----	0-9	.05	.17	1	3	86
	9-16	.10	.20			
	16-26	---	---			
Corbett-----	0-9	.05	.17	2	3	86
	9-23	.10	.17			
	23-33	---	---			
Rock Outcrop-----	---	---	---	-	---	---
130:						
Sofgran-----	0-3	.10	.15	5	3	86
	3-6	.10	.15			
	6-9	.05	.17			
	9-19	.05	.17			
	19-27	.05	.17			
	27-45	.05	.17			
	45-60	.05	.17			
Klauspeak-----	0-5	.10	.15	5	2	134
	5-16	.10	.15			
	16-22	.10	.15			
	22-40	.10	.15			
	40-60	.10	.15			
Temo-----	0-10	.05	.17	2	3	86
	10-16	.10	.17			
	16-26	---	---			
131:						
Sofgran-----	0-3	.10	.15	5	3	86
	3-6	.10	.15			
	6-9	.05	.17			
	9-19	.05	.17			
	19-27	.05	.17			
	27-45	.05	.17			
	45-60	.05	.17			
Temo-----	0-10	.05	.17	2	3	86
	10-16	.10	.17			
	16-26	---	---			
Shalgran-----	0-3	.05	.17	1	2	134
	3-14	.10	.15			
	14-24	---	---			
132:						
Sofgran-----	0-3	.10	.15	5	3	86
	3-6	.10	.15			
	6-9	.05	.17			
	9-19	.05	.17			
	19-27	.05	.17			
	27-45	.05	.17			
	45-60	.05	.17			
Temo-----	0-10	.05	.17	2	3	86
	10-16	.10	.17			
	16-26	---	---			
Rock Outcrop-----	---	---	---	-	---	---
140:						
Temo-----	0-10	.05	.17	1	3	86
	10-16	.10	.17			
	16-26	---	---			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
Dagget-----	0-8	.02	.10	4	3	86
	8-41	.05	.15			
	41-51	---	---			
Rock Outcrop-----	---	---	---	-	---	---
150: Mottskel-----	0-18	.10	.15	5	3	86
	18-60	.10	.15			
160: Hopeval-----	0-5	.55	.55	3	5	56
	5-12	.37	.37			
	12-15	.37	.37			
	15-26	.24	.28			
	26-33	.24	.28			
	33-60	.05	.20			
Hopeval-----	0-2	.55	.55	3	3	86
	2-12	.37	.37			
	12-15	.37	.37			
	15-26	.24	.28			
	26-33	.24	.28			
	33-60	.05	.20			
162: Corralval-----	0-3	.10	.24	3	6	48
	3-20	.10	.24			
	20-26	.15	.24			
	26-45	.10	.24			
	45-60	.05	.20			
Hopeval-----	0-2	.55	.55	3	3	86
	2-12	.37	.37			
	12-15	.37	.37			
	15-26	.24	.28			
	26-33	.24	.28			
	33-60	.05	.20			
170: Burnlake-----	0-2	.05	.15	5	8	0
	2-17	.10	.32			
	17-26	.10	.32			
	26-60	.05	.17			
Roadcat-----	0-8	.05	.15	5	6	48
	8-19	.05	.15			
	19-36	.05	.15			
	36-60	.05	.15			
171: Stumpatil-----	0-6	.05	.20	5	6	48
	6-11	.10	.24			
	11-26	.10	.28			
	26-33	.10	.28			
	33-60	.10	.28			
Morscour-----	0-2	.05	.24	1	8	0
	2-7	.05	.24			
	7-14	---	---			
	14-24	---	---			
172: Stumpatil-----	0-6	.05	.20	5	6	48
	6-11	.10	.24			
	11-26	.10	.28			
	26-33	.10	.28			
	33-60	.10	.28			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
173: Stumpatil-----	0-6	.05	.20	5	6	48
	6-11	.10	.24			
	11-26	.10	.28			
	26-33	.10	.28			
	33-60	.10	.28			
174: Stumpatil-----	0-6	.05	.20	5	6	48
	6-11	.10	.24			
	11-26	.10	.28			
	26-33	.10	.28			
	33-60	.10	.28			
Sonorapass-----	0-8	.10	.24	2	6	48
	8-17	.05	.24			
	17-21	.05	.24			
	21-31	---	---			
Snowtell-----	0-3	.10	.24	1	6	48
	3-10	.10	.24			
	10-20	---	---			
180: Shalgran-----	0-3	.05	.17	1	2	134
	3-14	.10	.15			
	14-24	---	---			
Rock Outcrop-----	---	---	---	-	---	---
190: Hopeval-----	0-2	.55	.55	3	3	86
	2-12	.37	.37			
	12-15	.37	.37			
	15-26	.24	.28			
	26-33	.24	.28			
	33-60	.05	.20			
Hopeval-----	0-5	.55	.55	3	5	56
	5-12	.37	.37			
	12-15	.37	.37			
	15-26	.24	.28			
	26-33	.24	.28			
	33-60	.05	.20			
200: Cavebear-----	0-4	.20	.32	3	6	48
	4-20	.17	.28			
	20-60	.02	.17			
Hopeval-----	0-2	.55	.55	3	3	86
	2-12	.37	.37			
	12-15	.37	.37			
	15-26	.24	.28			
	26-33	.24	.28			
	33-60	.05	.20			
Hopeval-----	0-5	.55	.55	3	5	56
	5-12	.37	.37			
	12-15	.37	.37			
	15-26	.24	.28			
	26-33	.24	.28			
	33-60	.05	.20			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
210:						
Waterpeak-----	0-5	.05	.15	5	2	134
	5-18	.05	.15			
	18-27	.05	.15			
	27-60	.15	.32			
Rock Outcrop-----	---	---	---	-	---	---
211:						
Waterpeak-----	0-5	.05	.15	5	2	134
	5-18	.05	.15			
	18-27	.05	.15			
	27-60	.15	.32			
Buggin-----	0-2	.05	.17	1	6	48
	2-7	.05	.17			
	7-10	.05	.17			
	10-16	---	---			
	16-26	---	---			
Rock Outcrop-----	---	---	---	-	---	---
212:						
Waterpeak-----	0-5	.05	.15	5	2	134
	5-18	.05	.15			
	18-27	.05	.15			
	27-60	.15	.32			
Sofgran-----	0-3	.10	.15	5	3	86
	3-6	.10	.15			
	6-9	.05	.17			
	9-19	.05	.17			
	19-27	.05	.17			
	27-45	.05	.17			
	45-60	.05	.17			
Temo-----	0-10	.05	.17	2	3	86
	10-16	.10	.17			
	16-26	---	---			
220:						
Hardtil-----	0-3	.05	.15	1	3	86
	3-7	.10	.24			
	7-18	.10	.24			
	18-28	---	---			
Alpineco-----	0-3	.05	.15	3	6	48
	3-12	.05	.15			
	12-22	.05	.15			
	22-27	.05	.15			
	27-49	.05	.15			
	49-59	---	---			
Rock Outcrop-----	---	---	---	-	---	---
221:						
Hardtil-----	0-3	.05	.15	1	3	86
	3-7	.10	.24			
	7-18	.10	.24			
	18-28	---	---			
Alpineco-----	0-3	.05	.15	3	6	48
	3-12	.05	.15			
	12-22	.05	.15			
	22-27	.05	.15			
	27-49	.05	.15			
	49-59	---	---			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
Rock Outcrop-----	---	---	---	-	---	---
222:						
Hardtil-----	0-3	.05	.15	1	3	86
	3-7	.10	.24			
	7-18	.10	.24			
	18-28	---	---			
Alpineco-----	0-3	.05	.15	3	6	48
	3-12	.05	.15			
	12-22	.05	.15			
	22-27	.05	.15			
	27-49	.05	.15			
	49-59	---	---			
Rock Outcrop-----	---	---	---	-	---	---
230:						
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
Thiefridge-----	0-1	---	---	1	8	0
	1-4	.05	.28			
	4-8	.05	.28			
	8-12	.05	.28			
	12-17	.05	.28			
	17-27	---	---			
Angelwhine-----	0-15	.02	.24	2	8	0
	15-23	.10	.24			
	23-43	.10	.37			
	43-60	.02	.20			
231:						
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
232:						
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
Hawkridge-----	0-1	.15	.32	1	6	48
	1-7	.15	.28			
	7-14	.10	.32			
	14-24	---	---			
233:						
Angelwhine-----	0-15	.02	.24	5	8	0
	15-23	.10	.24			
	23-43	.10	.37			
	43-60	.02	.20			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
Hawkridge-----	0-1	.15	.32	1	6	48
	1-7	.15	.28			
	7-14	.10	.32			
	14-24	---	---			
234: Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
Thiefridge-----	0-1	---	---	1	8	0
	1-4	.05	.28			
	4-8	.05	.28			
	8-12	.05	.28			
	12-17	.05	.28			
	17-27	---	---			
235: Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
Angelwhine-----	0-15	.02	.24	5	8	0
	15-23	.10	.24			
	23-43	.10	.37			
	43-60	.02	.20			
240: Granylith-----	0-1	.05	.17	1	3	86
	1-4	.05	.17			
	4-12	.05	.17			
	12-15	.05	.17			
	15-25	---	---			
Hargran-----	0-1	---	---	2	6	48
	1-9	.05	.28			
	9-24	.10	.28			
	24-36	.15	.32			
	36-39	.15	.32			
	39-49	---	---			
Rock Outcrop-----	---	---	---	-	---	---
250: Florand-----	0-1	.10	.24	3	6	48
	1-4	.10	.24			
	4-12	.15	.24			
	12-18	.15	.24			
	18-28	.10	.24			
	28-38	.10	.24			
	38-47	.15	.24			
	47-57	---	---			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
Lostridge-----	0-3	.10	.24	2	6	48
	3-11	.10	.24			
	11-23	.10	.24			
	23-29	.10	.24			
	29-39	---	---			
Fishsnooze-----	0-1	.10	.24	2	6	48
	1-9	.10	.24			
	9-13	.10	.24			
	13-35	.05	.24			
	35-45	---	---			
260:						
Hawkridge-----	0-1	.02	.24	1	8	0
	1-7	.15	.28			
	7-14	.10	.32			
	14-24	---	---			
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
261:						
Hawkridge-----	0-1	.15	.32	1	6	48
	1-7	.15	.28			
	7-14	.10	.32			
	14-24	---	---			
Lithnip-----	0-1	.05	.28	1	8	0
	1-5	.10	.32			
	5-15	---	---			
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
262:						
Domehill-----	0-2	.17	.32	1	6	48
	2-8	.15	.43			
	8-13	.15	.43			
	13-23	---	---			
Kiote-----	0-10	.24	.32	5	5	56
	10-17	.15	.32			
	17-30	.15	.32			
	30-60	.05	.32			
270:						
Duco-----	0-3	.17	.32	1	6	48
	3-5	.20	.32			
	5-18	.05	.32			
	18-28	---	---			
Smallcone-----	0-3	.10	.28	1	6	48
	3-6	.05	.28			
	6-16	---	---			
Cagle-----	0-4	.10	.32	3	8	0
	4-12	.17	.32			
	12-28	.17	.32			
	28-38	---	---			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
271:						
Duco-----	0-3	.17	.32	1	6	48
	3-5	.20	.32			
	5-18	.05	.32			
	18-28	---	---			
Vetagrande-----	0-3	.05	.15	5	6	48
	3-9	.05	.15			
	9-25	.05	.17			
	25-60	.05	.20			
Pinenut-----	0-1	.05	.17	2	6	48
	1-6	.15	.20			
	6-19	.05	.20			
	19-29	---	---			
280:						
Longcreek-----	0-3	.15	.37	1	8	0
	3-6	.17	.32			
	6-14	.15	.28			
	14-24	---	---			
Devada-----	0-4	.17	.37	1	8	0
	4-5	.32	.37			
	5-13	.17	.32			
	13-23	---	---			
290:						
Pernty-----	0-5	.15	.32	1	8	0
	5-15	.15	.37			
	15-25	---	---			
Chen-----	0-7	.10	.32	1	8	0
	7-17	.10	.49			
	17-27	---	---			
310:						
Bagval-----	0-2	.28	.28	5	6	48
	2-9	.28	.32			
	9-30	.28	.32			
	30-60	.28	.32			
Bagval-----	0-2	.28	.28	5	6	48
	2-9	.28	.32			
	9-30	.28	.32			
	30-60	.28	.32			
Wetbag-----	0-2	.24	.24	5	6	48
	2-6	.28	.32			
	6-15	.28	.32			
	15-26	.28	.32			
	26-46	.28	.32			
	46-60	.28	.32			
Wetbag-----	0-4	---	---	5	2	134
	4-6	.28	.32			
	6-15	.28	.32			
	15-26	.28	.32			
	26-46	.28	.32			
	46-60	.28	.32			
320:						
Franktown-----	0-0	---	---	1	8	0
	0-5	.20	.32			
	5-16	.10	.32			
	16-26	---	---			
Rock Outcrop-----	---	---	---	-	---	---

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
330:						
Oest-----	0-4	.15	.32	4	6	48
	4-10	.15	.32			
	10-60	.17	.32			
340:						
Aspocket-----	0-13	.15	.24	3	5	56
	13-38	.20	.32			
	38-54	.20	.32			
	54-64	---	---			
Aspocket-----	0-13	.15	.24	3	5	56
	13-38	.20	.32			
	38-54	.20	.32			
	54-64	---	---			
350:						
Leroman-----	0-5	.15	.24	2	6	48
	5-23	.10	.37			
	23-34	.10	.37			
	34-43	---	---			
	43-53	---	---			
Chenhig-----	0-3	.15	.24	1	6	48
	3-6	.10	.28			
	6-10	.10	.28			
	10-18	.10	.28			
	18-28	---	---			
Celeridge-----	0-3	.10	.20	1	8	0
	3-8	.10	.20			
	8-19	.10	.37			
	19-29	---	---			
Dogbed-----	0-14	.15	.24	5	6	48
	14-50	.10	.37			
	50-60	.10	.37			
360:						
Monibasin-----	0-15	.15	.24	5	5	56
	15-34	.10	.20			
	34-60	.10	.20			
Vermdig-----	0-2	.32	.32	5	5	56
	2-13	.24	.28			
	13-32	.24	.28			
	32-60	.24	.28			
370:						
Celeridge-----	0-3	.10	.20	1	8	0
	3-8	.10	.20			
	8-19	.10	.37			
	19-29	---	---			
Gerdog-----	0-3	.15	.24	1	6	48
	3-11	.10	.37			
	11-21	---	---			
Loope-----	0-1	.10	.24	1	6	48
	1-14	.05	.32			
	14-24	---	---			
Pinew-----	0-3	.15	.24	1	6	48
	3-8	.10	.37			
	8-15	.20	.32			
	15-25	---	---			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
380:						
Joecut-----	0-1	---	---	5	6	48
	1-2	.10	.24			
	2-14	.10	.24			
	14-40	.20	.32			
	40-60	.20	.32			
Celeridge-----	0-3	.10	.20	1	8	0
	3-8	.10	.20			
	8-19	.10	.37			
	19-29	---	---			
Joecut-----	0-1	---	---	5	2	134
	1-2	.10	.24			
	2-14	.10	.24			
	14-40	.20	.32			
	40-60	.20	.32			
Gerdog-----	0-3	.15	.24	1	6	48
	3-11	.10	.37			
	11-21	---	---			
381:						
Heenlake-----	0-6	.15	.24	2	6	48
	6-18	.20	.32			
	18-22	.20	.32			
	22-32	---	---			
Loope-----	0-1	.10	.24	1	6	48
	1-14	.05	.32			
	14-24	---	---			
Joecut-----	0-2	.10	.24	5	6	48
	2-14	.10	.24			
	14-40	.20	.32			
	40-60	.20	.32			
Joecut-----	0-1	---	---	5	2	134
	1-2	.10	.24			
	2-14	.10	.24			
	14-40	.20	.32			
	40-60	.20	.32			
382:						
Joecut-----	0-2	.10	.24	5	6	48
	2-14	.10	.24			
	14-40	.20	.32			
	40-60	.20	.32			
Joecut-----	0-1	---	---	5	2	134
	1-2	.10	.24			
	2-14	.10	.24			
	14-40	.20	.32			
	40-60	.20	.32			
390:						
Heenlake-----	0-6	.10	.43	2	6	48
	6-18	.20	.32			
	18-22	.20	.32			
	22-32	---	---			
Loope-----	0-1	.10	.24	1	6	48
	1-14	.05	.32			
	14-24	---	---			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
Chenhigh-----	0-3	.15	.24	1	6	48
	3-6	.10	.28			
	6-10	.10	.28			
	10-18	.10	.28			
	18-28	---	---			
391: Heenlake-----	0-6	.15	.24	2	6	48
	6-18	.20	.32			
	18-22	.20	.32			
	22-32	---	---			
Loope-----	0-1	.10	.24	1	6	48
	1-14	.05	.32			
	14-24	---	---			
Dogbed-----	0-14	.15	.24	5	6	48
	14-50	.10	.37			
	50-60	.10	.37			
392: Heenlake-----	0-6	.15	.24	2	6	48
	6-18	.20	.32			
	18-22	.20	.32			
	22-32	---	---			
Loope-----	0-1	.10	.24	1	6	48
	1-14	.05	.32			
	14-24	---	---			
400: Pinew-----	0-3	.15	.24	1	6	48
	3-8	.10	.37			
	8-15	.20	.32			
	15-25	---	---			
Carshal-----	0-2	.15	.24	1	6	48
	2-5	.10	.37			
	5-14	---	---			
	14-24	---	---			
Loope-----	0-1	.10	.24	1	6	48
	1-14	.05	.32			
	14-24	---	---			
Celeridge-----	0-3	.10	.20	1	8	0
	3-8	.10	.20			
	8-19	.10	.37			
	19-29	---	---			
401: Pinew-----	0-3	.15	.24	1	6	48
	3-8	.10	.37			
	8-15	.20	.32			
	15-25	---	---			
Rock Outcrop-----	---	---	---	-	---	---
410: Wolfcut-----	0-1	---	---	5	2	134
	1-4	.15	.24			
	4-11	.05	.32			
	11-60	.05	.32			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
420: Buggin-----	0-2	.05	.17	1	6	48
	2-7	.05	.17			
	7-10	.05	.17			
	10-16	---	---			
	16-26	---	---			
Rock Outcrop-----	---	---	---	-	---	---
430: Newcone-----	0-1	.15	.24	1	7	38
	1-6	.15	.24			
	6-20	---	---			
Rock Outcrop-----	---	---	---	-	---	---
440: Dogbed-----	0-14	.15	.24	5	6	48
	14-50	.10	.37			
	50-60	.10	.37			
Celeridge-----	0-3	.10	.20	1	8	0
	3-8	.10	.20			
	8-19	.10	.37			
	19-29	---	---			
Carshal-----	0-2	.15	.24	1	6	48
	2-5	.10	.37			
	5-14	---	---			
	14-24	---	---			
Joecut-----	0-1	---	---	5	2	134
	1-2	.10	.24			
	2-14	.10	.24			
	14-40	.20	.32			
	40-60	.20	.32			
450: Carshal-----	0-2	.15	.24	1	6	48
	2-5	.10	.37			
	5-14	---	---			
	14-24	---	---			
Loope-----	0-1	.10	.24	1	6	48
	1-14	.05	.32			
	14-24	---	---			
Rock Outcrop-----	---	---	---	-	---	---
460: Toejom-----	0-9	.05	.17	1	2	134
	9-14	.05	.17			
	14-24	---	---			
Pimogran-----	0-10	.05	.17	1	3	86
	10-18	.05	.17			
	18-28	---	---			
Rock Outcrop-----	---	---	---	-	---	---
461: Toejom-----	0-9	.05	.17	1	2	134
	9-14	.05	.17			
	14-24	---	---			
Pimogran-----	0-10	.05	.17	1	3	86
	10-18	.05	.17			
	18-28	---	---			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
Rock Outcrop-----	---	---	---	-	---	---
462:						
Toejom-----	0-9	.05	.17	1	2	134
	9-14	.05	.17			
	14-24	---	---			
Glenbrook-----	0-5	.10	.20	2	3	86
	5-14	.10	.17			
	14-24	---	---			
Pimogran-----	0-10	.05	.17	1	3	86
	10-18	.05	.17			
	18-28	---	---			
470:						
Sumeadow-----	0-0	---	---	5	2	134
	0-2	.10	.24			
	2-13	.05	.28			
	13-65	.10	.24			
Lostridge-----	0-3	.10	.24	2	6	48
	3-11	.10	.24			
	11-23	.10	.24			
	23-29	.10	.24			
	29-39	---	---			
471:						
Sumeadow-----	0-0	---	---	5	2	134
	0-2	.10	.24			
	2-13	.05	.28			
	13-65	.10	.24			
Sumeadow-----	0-0	---	---	5	2	134
	0-2	.10	.24			
	2-13	.05	.28			
	13-65	.10	.24			
480:						
Aspetill-----	0-5	.15	.24	5	6	48
	5-26	.10	.37			
	26-60	.10	.37			
Aspetill-----	0-5	.15	.24	5	6	48
	5-26	.10	.37			
	26-60	.10	.37			
481:						
Aspetill-----	0-5	.15	.24	5	6	48
	5-26	.10	.37			
	26-60	.10	.37			
Aspetill-----	0-5	.05	.15	5	6	48
	5-26	.10	.37			
	26-60	.10	.37			
490:						
Cloudburst-----	0-8	.10	.20	5	8	0
	8-16	.10	.20			
	16-29	.10	.20			
	29-60	.10	.20			
Murain-----	0-2	.10	.20	5	8	0
	2-7	.10	.20			
	7-18	.10	.20			
	18-26	.10	.20			
	26-41	.10	.20			
	41-60	.10	.20			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
491:						
Cloudburst-----	0-8	.10	.20	5	8	0
	8-16	.10	.20			
	16-29	.10	.20			
	29-60	.10	.20			
Murain-----	0-2	.10	.20	5	8	0
	2-7	.10	.20			
	7-18	.10	.20			
	18-26	.10	.20			
	26-41	.10	.20			
	41-60	.10	.20			
Hardtil-----	0-3	.05	.15	1	3	86
	3-7	.10	.24			
	7-18	.10	.24			
	18-28	---	---			
500:						
Chrisflat-----	0-7	.10	.24	5	6	48
	7-26	.10	.37			
	26-60	.10	.20			
510:						
Rubble Land-----	---	---	---	-	---	---
Lithnip-----	0-1	.05	.28	1	8	0
	1-5	.10	.32			
	5-15	---	---			
Rock Outcrop-----	---	---	---	-	---	---
Fishsnooze-----	0-1	.10	.24	2	6	48
	1-9	.10	.24			
	9-13	.10	.24			
	13-35	.05	.24			
	35-45	---	---			
511:						
Rock Outcrop-----	---	---	---	-	---	---
Snowtell-----	0-3	.10	.24	1	6	48
	3-10	.10	.24			
	10-20	---	---			
Forsell-----	0-1	.10	.24	5	6	48
	1-11	.10	.24			
	11-27	.10	.24			
	27-60	.10	.24			
512:						
Rock Outcrop-----	---	---	---	-	---	---
Snowtell-----	0-3	.10	.24	1	6	48
	3-10	.10	.24			
	10-20	---	---			
513:						
Rubble Land-----	---	---	---	-	---	---
Holdon-----	0-3	.05	.15	2	6	48
	3-23	.05	.15			
	23-47	.02	.05			
	47-57	---	---			
Rock Outcrop-----	---	---	---	-	---	---

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
520:						
Canfire-----	0-2	.15	.24	1	6	48
	2-7	.10	.37			
	7-17	.10	.37			
	17-27	---	---			
Crispy-----	0-7	.15	.24	1	7	38
	7-15	.10	.37			
	15-25	---	---			
Rock Outcrop-----	---	---	---	-	---	---
530:						
Elaero-----	0-6	.05	.17	2	3	86
	6-16	.10	.28			
	16-21	.10	.28			
	21-31	---	---			
Lockgate-----	0-14	.05	.17	3	3	86
	14-23	.05	.28			
	23-34	.05	.28			
	34-42	.05	.17			
	42-52	---	---			
Granhogany-----	0-4	.05	.17	1	3	86
	4-15	.05	.17			
	15-25	---	---			
Granidry-----	0-3	.10	.24	1	6	48
	3-11	.10	.28			
	11-16	.10	.37			
	16-26	---	---			
531:						
Elaero-----	0-6	.10	.24	2	5	56
	6-16	.10	.28			
	16-21	.10	.28			
	21-31	---	---			
Elaero-----	0-6	.05	.17	2	3	86
	6-16	.10	.28			
	16-21	.10	.28			
	21-31	---	---			
532:						
Elaero-----	0-6	.05	.17	2	3	86
	6-16	.10	.28			
	16-21	.10	.28			
	21-31	---	---			
Granidry-----	0-3	.10	.24	1	6	48
	3-11	.10	.28			
	11-16	.10	.37			
	16-26	---	---			
Rock Outcrop-----	---	---	---	-	---	---
540:						
Lostcannon, moist-----	0-18	.10	.24	5	6	48
	18-25	.10	.28			
	25-36	.10	.28			
	36-60	.10	.28			
Lostcannon-----	0-18	.10	.24	5	6	48
	18-25	.10	.28			
	25-36	.10	.28			
	36-60	.10	.28			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
560: Dunderberg-----	0-5	.17	.32	5	6	48
	5-9	.10	.32			
	9-28	.10	.32			
	28-39	.05	.28			
	39-60	.10	.32			
Dunderberg, warm-----	0-5	.17	.32	5	6	48
	5-9	.10	.32			
	9-28	.10	.32			
	28-39	.05	.28			
	39-60	.10	.32			
Conwayridge-----	0-4	.10	.32	5	8	0
	4-11	.05	.28			
	11-63	.10	.32			
Dunderberg, moist-----	0-5	.17	.32	5	6	48
	5-9	.10	.32			
	9-28	.10	.32			
	28-39	.05	.28			
	39-60	.10	.32			
561: Dunderberg-----	0-5	.17	.32	5	6	48
	5-9	.10	.32			
	9-28	.10	.32			
	28-39	.05	.28			
	39-60	.10	.32			
Dunderberg, warm-----	0-5	.17	.32	5	6	48
	5-9	.10	.32			
	9-28	.10	.32			
	28-39	.05	.28			
	39-60	.10	.32			
Dunderberg, moist-----	0-5	.17	.32	5	6	48
	5-9	.10	.32			
	9-28	.10	.32			
	28-39	.05	.28			
	39-60	.10	.32			
570: Angelwhine-----	0-15	.02	.24	5	8	0
	15-23	.10	.24			
	23-43	.10	.37			
	43-60	.02	.20			
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
Hawkridge-----	0-1	.02	.24	1	8	0
	1-7	.15	.28			
	7-14	.10	.32			
	14-24	---	---			
580: Murain-----	0-2	.10	.24	5	6	48
	2-7	.10	.20			
	7-18	.10	.20			
	18-26	.10	.20			
	26-41	.10	.20			
	41-60	.10	.20			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
Shorthike-----	0-2	.05	.17	5	3	86
	2-10	.05	.17			
	10-30	.05	.24			
	30-60	.05	.24			
Murain, moist-----	0-2	.10	.24	5	6	48
	2-7	.10	.20			
	7-18	.10	.20			
	18-26	.10	.20			
	26-41	.10	.20			
	41-60	.10	.20			
581: Murain-----	0-2	.10	.24	5	6	48
	2-7	.10	.20			
	7-18	.10	.20			
	18-26	.10	.20			
	26-41	.10	.20			
	41-60	.10	.20			
Murain-----	0-2	.10	.20	5	8	0
	2-7	.10	.20			
	7-18	.10	.20			
	18-26	.10	.20			
	26-41	.10	.20			
	41-60	.10	.20			
590: Loope-----	0-1	.10	.24	1	6	48
	1-14	.05	.32			
	14-24	---	---			
Heenlake-----	0-6	.15	.24	2	6	48
	6-18	.20	.32			
	18-22	.20	.32			
	22-32	---	---			
Carshal-----	0-2	.15	.24	1	6	48
	2-5	.10	.37			
	5-14	---	---			
	14-24	---	---			
591: Loope-----	0-1	.10	.24	1	6	48
	1-14	.05	.32			
	14-24	---	---			
Heenlake-----	0-6	.15	.24	2	6	48
	6-18	.20	.32			
	18-22	.20	.32			
	22-32	---	---			
Celeridge-----	0-3	.10	.20	1	8	0
	3-8	.10	.20			
	8-19	.10	.37			
	19-29	---	---			
592: Loope-----	0-1	.10	.24	1	6	48
	1-14	.05	.32			
	14-24	---	---			
Pinew-----	0-3	.15	.24	1	6	48
	3-8	.10	.37			
	8-15	.20	.32			
	15-25	---	---			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
Heenlake-----	0-6	.15	.24	2	6	48
	6-18	.20	.32			
	18-22	.20	.32			
	22-32	---	---			
600: Snowtell-----	0-3	.10	.24	1	6	48
	3-10	.10	.24			
	10-20	---	---			
Sonorapass-----	0-8	.10	.24	2	6	48
	8-17	.05	.24			
	17-21	.05	.24			
	21-31	---	---			
Rock Outcrop-----	---	---	---	-	---	---
610: Forsell-----	0-1	.10	.24	5	6	48
	1-11	.10	.24			
	11-27	.10	.24			
	27-60	.10	.24			
Snowtell-----	0-3	.10	.24	1	6	48
	3-10	.10	.24			
	10-20	---	---			
Rock Outcrop-----	---	---	---	-	---	---
611: Forsell-----	0-1	.10	.24	5	6	48
	1-11	.10	.24			
	11-27	.10	.24			
	27-60	.10	.24			
Snowtell-----	0-3	.10	.24	1	6	48
	3-10	.10	.24			
	10-20	---	---			
Rock Outcrop-----	---	---	---	-	---	---
620: Indian Creek-----	0-1	.10	.28	2	6	48
	1-3	.28	.32			
	3-20	.24	.37			
	20-25	---	---			
	25-60	.10	.20			
630: Olac-----	0-3	.10	.24	1	6	48
	3-10	.05	.43			
	10-20	---	---			
Flex-----	0-2	.10	.24	1	6	48
	2-10	.10	.28			
	10-20	---	---			
Duco-----	0-3	.10	.24	1	6	48
	3-5	.20	.32			
	5-18	.05	.32			
	18-28	---	---			
640: Koontz-----	0-2	.10	.32	2	6	48
	2-12	.10	.43			
	12-22	---	---			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
Nosrac-----	0-12	.10	.32	5	6	48
	12-45	.15	.37			
	45-60	.10	.37			
650: Shree-----	0-14	.10	.32	5	7	38
	14-40	.10	.43			
	40-60	.15	.32			
651: Shree-----	0-14	.10	.32	5	6	48
	14-40	.10	.43			
	40-60	.15	.32			
Holbrook-----	0-8	.10	.32	5	7	38
	8-60	.15	.37			
660: Delhew-----	0-16	.05	.15	3	3	86
	16-27	.15	.20			
	27-40	.02	.17			
	40-60	.02	.20			
Grandridge-----	0-1	.10	.24	1	6	48
	1-10	.10	.37			
	10-18	.10	.37			
	18-28	---	---			
Bakscratch-----	0-7	.10	.24	2	6	48
	7-11	.05	.17			
	11-16	.05	.17			
	16-26	---	---			
670: Springmeyer-----	0-2	.32	.37	5	5	56
	2-10	.32	.37			
	10-32	.20	.28			
	32-60	.20	.24			
671: Springmeyer-----	0-2	.32	.37	5	5	56
	2-10	.32	.37			
	10-22	.20	.28			
	22-60	.20	.24			
Cassiro-----	0-15	.24	.32	4	5	56
	15-45	.20	.37			
	45-55	---	---			
680: Rolldown-----	0-2	.17	.32	5	8	0
	2-10	.17	.32			
	10-60	.05	.32			
Mountpatterson-----	0-9	.20	.32	1	8	0
	9-18	.05	.32			
	18-28	---	---			
Rubble Land-----	---	---	---	-	---	---
700: Coldtree-----	0-1	.05	.17	3	3	86
	1-9	.05	.15			
	9-24	.10	.32			
	24-44	.10	.32			
	44-54	---	---			
Rubble Land-----	---	---	---	-	---	---

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
710:						
Bakscratch-----	0-7	.10	.24	1	6	48
	7-11	.05	.17			
	11-16	.05	.17			
	16-26	---	---			
Grandridge-----	0-1	.10	.24	2	6	48
	1-10	.10	.37			
	10-18	.10	.37			
	18-28	---	---			
McTom-----	0-2	---	---	1	8	0
	2-18	.05	.17			
	18-34	.05	.17			
	34-44	---	---			
720:						
Nohelp-----	0-11	.20	.32	5	3	86
	11-21	.10	.28			
	21-60	.10	.28			
Joenchris-----	0-6	.15	.24	5	3	86
	6-14	.20	.28			
	14-26	.28	.32			
	26-60	.10	.28			
730:						
Burchflat-----	0-9	.10	.24	2	6	48
	9-21	.05	.32			
	21-36	.10	.20			
	36-46	---	---			
Loope-----	0-1	.10	.24	1	6	48
	1-14	.05	.32			
	14-24	---	---			
731:						
Burchflat-----	0-9	.10	.24	2	6	48
	9-21	.05	.32			
	21-36	.10	.20			
	36-46	---	---			
Celeridge-----	0-3	.10	.20	1	8	0
	3-8	.10	.20			
	8-19	.10	.37			
	19-29	---	---			
Loope-----	0-1	.10	.24	1	6	48
	1-14	.05	.32			
	14-24	---	---			
740:						
Jackflat-----	0-6	.10	.24	3	6	48
	6-14	.10	.37			
	14-45	.10	.37			
	45-55	---	---			
Grandridge-----	0-1	.10	.24	2	6	48
	1-10	.10	.37			
	10-18	.10	.37			
	18-28	---	---			
760:						
Thiefridge-----	0-1	---	---	1	8	0
	1-4	.05	.28			
	4-8	.05	.28			
	8-12	.05	.28			
	12-17	.05	.28			
	17-27	---	---			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
Thief ridge-----	0-1	---	---	1	8	0
	1-4	.05	.28			
	4-8	.05	.28			
	8-12	.05	.28			
	12-17	.05	.28			
	17-27	---	---			
Rock Outcrop-----	---	---	---	-	---	---
770: Sweetmount-----	0-2	.10	.24	4	6	48
	2-16	.10	.37			
	16-24	.20	.32			
	24-39	.20	.32			
	39-55	.10	.28			
	55-65	---	---			
Hawkinspeak-----	0-3	.15	.24	2	6	48
	3-9	.15	.24			
	9-33	.10	.37			
	33-43	---	---			
Hawkridge-----	0-1	.15	.32	1	6	48
	1-7	.15	.28			
	7-14	.10	.32			
	14-24	---	---			
780: Granhogany-----	0-4	.05	.17	1	3	86
	4-15	.05	.17			
	15-25	---	---			
Rock Outcrop-----	---	---	---	-	---	---
790: Dab-----	0-3	.02	.15	5	8	0
	3-10	.02	.15			
	10-24	.05	.17			
	24-60	.05	.17			
Dab-----	0-3	.02	.15	5	8	0
	3-10	.02	.15			
	10-24	.05	.17			
	24-60	.05	.17			
791: Dab-----	0-3	.02	.15	5	8	0
	3-12	.02	.15			
	12-24	.05	.17			
	24-60	.05	.17			
Longday-----	0-5	.17	.32	5	8	0
	5-13	.05	.32			
	13-60	.05	.32			
Thief ridge-----	0-1	---	---	1	8	0
	1-4	.05	.28			
	4-8	.05	.28			
	8-12	.05	.28			
	12-17	.05	.28			
	17-27	---	---			
792: Dab-----	0-3	.02	.15	5	8	0
	3-10	.02	.15			
	10-24	.05	.17			
	24-60	.05	.17			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
Aspocket-----	0-13	.15	.24	3	5	56
	13-38	.20	.32			
	38-54	.20	.32			
	54-64	---	---			
Hawkridge-----	0-1	.15	.32	1	6	48
	1-7	.15	.28			
	7-14	.10	.32			
	14-24	---	---			
800: Grandridge-----	0-1	.10	.24	1	6	48
	1-10	.10	.37			
	10-18	.10	.37			
	18-28	---	---			
Delhew-----	0-16	.05	.15	3	3	86
	16-27	.15	.20			
	27-40	.02	.17			
	40-60	.02	.20			
801: Grandridge-----	0-1	.10	.24	1	6	48
	1-10	.10	.37			
	10-18	.10	.37			
	18-28	---	---			
Delhew-----	0-16	.05	.15	3	3	86
	16-27	.15	.20			
	27-40	.02	.17			
	40-60	.02	.20			
Bullville-----	0-10	.05	.17	3	6	48
	10-15	.02	.20			
	15-30	.02	.20			
	30-40	---	---			
810: Corbett-----	0-9	.05	.17	2	3	86
	9-23	.10	.17			
	23-33	---	---			
Toiyabe-----	0-9	.05	.17	1	3	86
	9-16	.10	.20			
	16-26	---	---			
Rock Outcrop-----	---	---	---	-	---	---
820: Freelpeak-----	0-2	.02	.05	2	8	0
	2-4	.02	.20			
	4-8	.10	.17			
	8-36	.15	.37			
	36-46	---	---			
Windyridge-----	0-2	.05	.17	1	3	86
	2-10	.05	.17			
	10-20	---	---			
Rock Outcrop-----	---	---	---	-	---	---
830: Windyridge-----	0-2	.05	.17	1	3	86
	2-10	.05	.17			
	10-20	---	---			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
Freelpeak-----	0-2	.02	.05	2	8	0
	2-4	.02	.20			
	4-8	.10	.17			
	8-36	.15	.37			
	36-46	---	---			
Rock Outcrop-----	---	---	---	-	---	---
840:						
Lavaspring-----	0-7	.55	.55	5	4	86
	7-31	.15	.28			
	31-60	.15	.24			
Trespass-----	0-2	.20	.32	5	5	56
	2-12	.15	.43			
	12-35	.10	.37			
	35-54	.10	.37			
	54-60	.05	.28			
Lavaspring-----	0-7	.55	.55	5	4	86
	7-31	.15	.28			
	31-60	.15	.24			
850:						
Lunder-----	0-7	.10	.24	1	6	48
	7-17	.24	.37			
	17-33	---	---			
	33-60	.05	.32			
851:						
Lunder-----	0-7	.10	.24	1	6	48
	7-17	.24	.37			
	17-33	---	---			
	33-60	.05	.32			
Leviathan-----	0-10	.10	.24	5	6	48
	10-60	.10	.32			
860:						
Hardnut-----	0-3	.17	.32	1	6	48
	3-8	.15	.37			
	8-15	.10	.32			
	15-25	---	---			
Ocashe-----	0-3	.15	.32	1	8	0
	3-7	.15	.37			
	7-13	.15	.37			
	13-23	---	---			
870:						
Epvip-----	0-4	.10	.24	2	6	48
	4-16	.10	.32			
	16-26	---	---			
Domehill-----	0-2	.17	.32	1	6	48
	2-8	.15	.43			
	8-13	.15	.43			
	13-23	---	---			
Ashflat-----	0-7	.20	.32	5	3	86
	7-43	.15	.43			
	43-60	.10	.32			
871:						
Halfash-----	0-3	.17	.32	1	6	48
	3-8	.15	.43			
	8-17	.10	.32			
	17-27	---	---			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
Domehill-----	0-2	.17	.32	1	6	48
	2-8	.15	.43			
	8-13	.15	.43			
	13-23	---	---			
872: Epvip-----	0-4	.10	.24	2	6	48
	4-16	.10	.32			
	16-26	---	---			
Vetash-----	0-9	.10	.24	5	6	48
	9-30	.15	.43			
	30-46	.15	.43			
	46-60	.15	.24			
Epvip-----	0-4	.10	.24	2	6	48
	4-16	.10	.32			
	16-26	---	---			
873: Epvip-----	0-4	.10	.24	2	6	48
	4-16	.10	.32			
	16-26	---	---			
Hardnut-----	0-3	.17	.32	1	6	48
	3-8	.15	.37			
	8-15	.10	.32			
	15-25	---	---			
Vetash-----	0-9	.10	.24	5	6	48
	9-30	.15	.43			
	30-46	.15	.43			
	46-60	.15	.24			
880: Mopana-----	0-5	.17	.32	1	6	48
	5-9	.28	.32			
	9-19	.32	.43			
	19-60	---	---			
890: Masonic-----	0-4	.17	.32	2	6	48
	4-7	.15	.43			
	7-10	.20	.37			
	10-21	.20	.32			
	21-31	---	---			
Epvip-----	0-4	.10	.24	2	6	48
	4-16	.10	.32			
	16-26	---	---			
Domehill-----	0-2	.17	.32	1	6	48
	2-8	.15	.43			
	8-13	.15	.43			
	13-23	---	---			
900: Brokenhoe-----	0-6	.17	.32	2	5	56
	6-10	.10	.32			
	10-20	.15	.37			
	20-37	---	---			
	37-60	.10	.24			
Fisherdig-----	0-5	.10	.24	1	6	48
	5-8	.15	.43			
	8-19	.10	.28			
	19-46	---	---			
	46-60	.10	.24			

TABLE 26.-- Erosion Properties of Soils--Continued

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth Inches	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
910: Indian Creek-----	0-1	.10	.28	2	6	48
	1-3	.28	.32			
	3-20	.24	.37			
	20-25	---	---			
	25-60	.10	.20			
Haybourne-----	0-5	.17	.32	5	5	56
	5-20	.28	.43			
	20-60	.15	.24			
920: Aquic Torrifluvents-----	0-6	.05	.24	5	8	0
	6-60	.02	.17			
Conway-----	0-4	.37	.37	5	3	86
	4-42	.32	.37			
	42-60	.32	.37			
Torrifluventic Haploxerolls-----	0-5	.05	.24	5	8	0
	5-18	.05	.24			
	18-60	.05	.10			
930: Lavaspring-----	0-7	.55	.55	5	4	86
	7-31	.15	.28			
	31-60	.15	.24			
Lavaspring-----	0-7	.55	.55	5	4	86
	7-31	.15	.28			
	31-60	.15	.24			
960: Rose Creek-----	0-18	.37	.37	5	5	56
	18-60	.28	.37			
998: Dumps-----	---	---	---	-	---	---
Pits-----	---	---	---	-	---	---
999: Water-----	---	---	---	-	---	---

TABLE 27.-- Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
100: Lithnip-----	D	Jan-Dec	---	---	---	---	None	---	None
Hawkinspeak-----	B	Jan-Dec	---	---	---	---	None	---	None
101: Lithnip, moist-----	D	Jan-Dec	---	---	---	---	None	---	None
Fishsnooze-----	B	Jan-Dec	---	---	---	---	None	---	None
102: Lithnip-----	D	Jan-Dec	---	---	---	---	None	---	None
Fishsnooze-----	B	Jan-Dec	---	---	---	---	None	---	None
103: Lithnip-----	D	Jan-Dec	---	---	---	---	None	---	None
Meiss-----	D	Jan-Dec	---	---	---	---	None	---	None
Hawkinspeak-----	B	Jan-Dec	---	---	---	---	None	---	None
110: Jobsis-----	D	Jan-Dec	---	---	---	---	None	---	None
Whittell-----	C	Jan-Dec	---	---	---	---	None	---	None
111: Whittell-----	C	Jan-Dec	---	---	---	---	None	---	None
Jobsis-----	D	Jan-Dec	---	---	---	---	None	---	None
112: Jobsis-----	D	Jan-Dec	---	---	---	---	None	---	None
Whittell-----	C	Jan-Dec	---	---	---	---	None	---	None
113: Whittell-----	C	Jan-Dec	---	---	---	---	None	---	None
Jobsis-----	D	Jan-Dec	---	---	---	---	None	---	None
120: Toiyabe-----	D	Jan-Dec	---	---	---	---	None	---	None
Corbett-----	D	Jan-Dec	---	---	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
121: Toiyabe-----	D	Jan-Dec	---	---	---	---	None	---	None
Corbett-----	D	Jan-Dec	---	---	---	---	None	---	None
122: Toiyabe-----	D	Jan-Dec	---	---	---	---	None	---	None
Corbett-----	D	Jan-Dec	---	---	---	---	None	---	None
130: Sofgran-----	A	Jan-Dec	---	---	---	---	None	---	None
Klauspeak-----	A	Jan-Dec	---	---	---	---	None	---	None
Temo-----	D	Jan-Dec	---	---	---	---	None	---	None
131: Sofgran-----	A	Jan-Dec	---	---	---	---	None	---	None
Temo-----	D	Jan-Dec	---	---	---	---	None	---	None
Shalgran-----	D	Jan-Dec	---	---	---	---	None	---	None
132: Sofgran-----	A	Jan-Dec	---	---	---	---	None	---	None
Temo-----	D	Jan-Dec	---	---	---	---	None	---	None
140: Temo-----	D	Jan-Dec	---	---	---	---	None	---	None
Dagget-----	A	Jan-Dec	---	---	---	---	None	---	None
150: Mottskel-----	A	January	---	---	---	---	None	Ex. brief	Rare
		February	---	---	---	---	None	Ex. brief	Rare
		March	---	---	---	---	None	Ex. brief	Rare
		April	---	---	---	---	None	Ex. brief	Rare
		May	---	---	---	---	None	Ex. brief	Rare
		June	---	---	---	---	None	Ex. brief	Rare
		July	---	---	---	---	None	Ex. brief	Rare
		August	---	---	---	---	None	Ex. brief	Rare
		September	---	---	---	---	None	Ex. brief	Rare
		October	---	---	---	---	None	Ex. brief	Rare
		November	---	---	---	---	None	Ex. brief	Rare
		December	---	---	---	---	None	Ex. brief	Rare

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
160: Hopeval-----	D		Ft	Ft	Ft				
		January	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		February	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		March	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		April	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		May	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		June	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		July	1.0-2.0	>6.0	---	---	None	---	None
		August	1.0-2.0	>6.0	---	---	None	---	None
		September	1.0-2.0	>6.0	---	---	None	---	None
		October	1.0-2.0	>6.0	---	---	None	---	None
		November	0.0-2.0	>6.0	---	---	None	---	None
		December	0.0-2.0	>6.0	---	---	None	Brief	Occasional
Hopeval-----	D								
		January	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		February	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		March	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		April	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		May	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		June	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		July	2.0-3.0	>6.0	---	---	None	---	None
		August	2.0-3.0	>6.0	---	---	None	---	None
		September	2.0-3.0	>6.0	---	---	None	---	None
		October	2.0-3.0	>6.0	---	---	None	---	None
		November	1.7-2.5	>6.0	---	---	None	---	None
		December	1.0-2.0	>6.0	---	---	None	Brief	Occasional
162: Corralval-----	A								
		January	1.6-3.3	>6.0	---	---	None	Very brief	Rare
		February	1.6-3.3	>6.0	---	---	None	Very brief	Rare
		March	1.6-3.3	>6.0	---	---	None	Very brief	Rare
		April	1.6-3.3	>6.0	---	---	None	Very brief	Rare
		May	1.6-3.3	>6.0	---	---	None	Very brief	Rare
		June	1.6-3.3	>6.0	---	---	None	Very brief	Rare
		July	2.5-5.0	>6.0	---	---	None	Very brief	Rare
		August	2.5-5.0	>6.0	---	---	None	Very brief	Rare
		September	2.5-5.0	>6.0	---	---	None	Very brief	Rare
		October	2.5-5.0	>6.0	---	---	None	Very brief	Rare
		November	2.5-5.0	>6.0	---	---	None	Very brief	Rare
		December	2.5-5.0	>6.0	---	---	None	Very brief	Rare
Hopeval-----	D								
		January	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		February	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		March	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		April	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		May	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		June	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		July	2.0-3.0	>6.0	---	---	None	---	None
		August	2.0-3.0	>6.0	---	---	None	---	None
		September	2.0-3.0	>6.0	---	---	None	---	None
		October	2.0-3.0	>6.0	---	---	None	---	None
		November	1.7-2.5	>6.0	---	---	None	---	None
		December	1.0-2.0	>6.0	---	---	None	Brief	Occasional
170: Burnlake-----	A	Jan-Dec	---	---	---	---	None	---	None
Roadcat-----		Jan-Dec	---	---	---	---	None	---	None
171: Stumpatil-----	B	Jan-Dec	---	---	---	---	None	---	None
Morscour-----		Jan-Dec	---	---	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
172: Stumpatil-----	B	Jan-Dec	---	---	---	---	None	---	None
173: Stumpatil-----	B	Jan-Dec	---	---	---	---	None	---	None
174: Stumpatil-----	B	Jan-Dec	---	---	---	---	None	---	None
Sonorapass-----	D	Jan-Dec	---	---	---	---	None	---	None
Snowtell-----	D	Jan-Dec	---	---	---	---	None	---	None
180: Shalgran-----	D	Jan-Dec	---	---	---	---	None	---	None
190: Hopeval-----	D	January	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		February	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		March	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		April	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		May	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		June	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		July	2.0-3.0	>6.0	---	---	None	---	None
		August	2.0-3.0	>6.0	---	---	None	---	None
		September	2.0-3.0	>6.0	---	---	None	---	None
		October	2.0-3.0	>6.0	---	---	None	---	None
		November	1.7-2.5	>6.0	---	---	None	---	None
		December	1.0-2.0	>6.0	---	---	None	Brief	Occasional
Hopeval-----	D	January	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		February	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		March	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		April	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		May	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		June	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		July	1.0-2.0	>6.0	---	---	None	---	None
		August	1.0-2.0	>6.0	---	---	None	---	None
		September	1.0-2.0	>6.0	---	---	None	---	None
		October	1.0-2.0	>6.0	---	---	None	---	None
		November	0.0-2.0	>6.0	---	---	None	---	None
		December	0.0-2.0	>6.0	---	---	None	Brief	Occasional
200: Cavebear-----	B	January	1.6-2.5	>6.0	---	---	None	Very brief	Rare
		February	1.6-2.5	>6.0	---	---	None	Very brief	Rare
		March	1.0-2.0	>6.0	---	---	None	Very brief	Rare
		April	1.0-2.0	>6.0	---	---	None	Very brief	Rare
		May	1.0-2.0	>6.0	---	---	None	Very brief	Rare
		June	1.0-2.0	>6.0	---	---	None	Very brief	Rare
		July	2.0-3.3	>6.0	---	---	None	Very brief	Rare
		August	2.5-5.0	>6.0	---	---	None	Very brief	Rare
		September	2.5-5.0	>6.0	---	---	None	Very brief	Rare
		October	2.5-5.0	>6.0	---	---	None	Very brief	Rare
		November	2.5-5.0	>6.0	---	---	None	Very brief	Rare
		December	2.5-5.0	>6.0	---	---	None	Very brief	Rare

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Hopeval-----	D		Ft	Ft	Ft				
		January	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		February	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		March	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		April	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		May	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		June	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		July	2.0-3.0	>6.0	---	---	None	---	None
		August	2.0-3.0	>6.0	---	---	None	---	None
		September	2.0-3.0	>6.0	---	---	None	---	None
		October	2.0-3.0	>6.0	---	---	None	---	None
		November	1.7-2.5	>6.0	---	---	None	---	None
		December	1.0-2.0	>6.0	---	---	None	Brief	Occasional
Hopeval-----	D								
		January	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		February	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		March	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		April	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		May	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		June	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		July	1.0-2.0	>6.0	---	---	None	---	None
		August	1.0-2.0	>6.0	---	---	None	---	None
		September	1.0-2.0	>6.0	---	---	None	---	None
		October	1.0-2.0	>6.0	---	---	None	---	None
		November	0.0-2.0	>6.0	---	---	None	---	None
		December	0.0-2.0	>6.0	---	---	None	Brief	Occasional
210: Waterpeak-----	A								
		Jan-Dec	---	---	---	---	None	---	None
211: Waterpeak-----	A								
		Jan-Dec	---	---	---	---	None	---	None
Buggin-----	D								
		Jan-Dec	---	---	---	---	None	---	None
212: Waterpeak-----	A								
		Jan-Dec	---	---	---	---	None	---	None
Sofgran-----	A								
		Jan-Dec	---	---	---	---	None	---	None
Temo-----	D								
		Jan-Dec	---	---	---	---	None	---	None
220: Hardtil-----	D								
		April	0.6-1.4	1.7-1.7	---	---	None	---	None
		May	0.6-1.4	1.7-1.7	---	---	None	---	None
		June	0.6-1.4	1.7-1.7	---	---	None	---	None
		July	1.2-1.7	1.7-1.7	---	---	None	---	None
Alpineco-----	A								
		April	2.0-3.0	5.0-5.0	---	---	None	---	None
		May	2.0-3.0	5.0-5.0	---	---	None	---	None
		June	2.5-3.5	5.0-5.0	---	---	None	---	None
		July	3.0-5.0	5.0-5.0	---	---	None	---	None
221: Hardtil-----	D								
		April	0.6-1.4	1.7-1.7	---	---	None	---	None
		May	0.6-1.4	1.7-1.7	---	---	None	---	None
		June	0.6-1.4	1.7-1.7	---	---	None	---	None
		July	1.2-1.7	1.7-1.7	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Alpineco-----	A	April	2.0-3.0	5.0-5.0	---	---	None	---	None
		May	2.0-3.0	5.0-5.0	---	---	None	---	None
		June	2.5-3.5	5.0-5.0	---	---	None	---	None
		July	3.0-5.0	5.0-5.0	---	---	None	---	None
222: Hardtil-----	D	April	0.6-1.4	1.7-1.7	---	---	None	---	None
		May	0.6-1.4	1.7-1.7	---	---	None	---	None
		June	0.6-1.4	1.7-1.7	---	---	None	---	None
		July	1.2-1.7	1.7-1.7	---	---	None	---	None
Alpineco-----	A	April	2.0-3.0	5.0-5.0	---	---	None	---	None
		May	2.0-3.0	5.0-5.0	---	---	None	---	None
		June	2.5-3.5	5.0-5.0	---	---	None	---	None
		July	3.0-5.0	5.0-5.0	---	---	None	---	None
230: Hawkinspeak-----	B	Jan-Dec	---	---	---	---	None	---	None
Thiefridge-----		Jan-Dec	---	---	---	---	None	---	None
Angelwhine-----	B	Jan-Dec	---	---	---	---	None	---	None
231: Hawkinspeak-----		Jan-Dec	---	---	---	---	None	---	None
Hawkinspeak-----	B	Jan-Dec	---	---	---	---	None	---	None
232: Hawkinspeak-----		Jan-Dec	---	---	---	---	None	---	None
Hawkinspeak-----	B	Jan-Dec	---	---	---	---	None	---	None
Hawkr ridge-----		Jan-Dec	---	---	---	---	None	---	None
233: Angelwhine-----	B	Jan-Dec	---	---	---	---	None	---	None
Hawkinspeak-----		Jan-Dec	---	---	---	---	None	---	None
Hawkr ridge-----	D	Jan-Dec	---	---	---	---	None	---	None
234: Hawkinspeak-----		Jan-Dec	---	---	---	---	None	---	None
Hawkinspeak-----	B	Jan-Dec	---	---	---	---	None	---	None
Thiefridge-----		Jan-Dec	---	---	---	---	None	---	None
235: Hawkinspeak-----	B	Jan-Dec	---	---	---	---	None	---	None
Hawkinspeak-----		Jan-Dec	---	---	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Angelwhine-----	B	Jan-Dec	---	---	---	---	None	---	None
240: Granylith-----	D	April	0.6-1.4	1.7-1.7	---	---	None	---	None
		May	0.6-1.4	1.7-1.7	---	---	None	---	None
		June	0.6-1.4	1.7-1.7	---	---	None	---	None
		July	1.2-1.7	1.7-1.7	---	---	None	---	None
Hargran-----	B	April	2.0-3.0	5.0-5.0	---	---	None	---	None
		May	2.0-3.0	5.0-5.0	---	---	None	---	None
		June	2.5-3.5	5.0-5.0	---	---	None	---	None
		July	3.0-5.0	5.0-5.0	---	---	None	---	None
250: Florand-----	A	Jan-Dec	---	---	---	---	None	---	None
Lostridge-----	B	Jan-Dec	---	---	---	---	None	---	None
Fishsnooze-----	B	Jan-Dec	---	---	---	---	None	---	None
260: Hawkridge-----	D	Jan-Dec	---	---	---	---	None	---	None
Hawkinspeak-----	B	Jan-Dec	---	---	---	---	None	---	None
Hawkinspeak-----	B	Jan-Dec	---	---	---	---	None	---	None
261: Hawkridge-----	D	Jan-Dec	---	---	---	---	None	---	None
Lithnip-----	D	Jan-Dec	---	---	---	---	None	---	None
Hawkinspeak-----	B	Jan-Dec	---	---	---	---	None	---	None
262: Domehill-----	D	Jan-Dec	---	---	---	---	None	---	None
Kiote-----	B	Jan-Dec	---	---	---	---	None	---	None
270: Duco-----	D	Jan-Dec	---	---	---	---	None	---	None
Smallcone-----	D	Jan-Dec	---	---	---	---	None	---	None
Cagle-----	D	Jan-Dec	---	---	---	---	None	---	None
271: Duco-----	D	Jan-Dec	---	---	---	---	None	---	None
Vetagrande-----	C	Jan-Dec	---	---	---	---	None	---	None
Pinenut-----	D	Jan-Dec	---	---	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
280: Longcreek-----	D	Jan-Dec	---	---	---	---	None	---	None
Devada-----	D	Jan-Dec	---	---	---	---	None	---	None
290: Pernty-----	D	Jan-Dec	---	---	---	---	None	---	None
Chen-----	D	Jan-Dec	---	---	---	---	None	---	None
310: Bagval-----	D	January	---	---	---	---	None	Extremely brief	Rare
		February	---	---	---	---	None	Extremely brief	Rare
		March	---	---	---	---	None	Extremely brief	Rare
		April	---	---	---	---	None	Extremely brief	Rare
		May	---	---	---	---	None	Extremely brief	Rare
		June	---	---	---	---	None	Extremely brief	Rare
		July	---	---	---	---	None	Extremely brief	Rare
		August	---	---	---	---	None	Extremely brief	Rare
		September	---	---	---	---	None	Extremely brief	Rare
		October	---	---	---	---	None	Extremely brief	Rare
		November	---	---	---	---	None	Extremely brief	Rare
		December	---	---	---	---	None	Extremely brief	Rare
Bagval-----	D	January	5.0-6.0	>6.0	---	---	None	Extremely brief	Rare
		February	4.2-5.8	>6.0	---	---	None	Extremely brief	Rare
		March	3.3-5.0	>6.0	---	---	None	Extremely brief	Rare
		April	3.3-5.0	>6.0	---	---	None	Extremely brief	Rare
		May	3.3-5.0	>6.0	---	---	None	Extremely brief	Rare
		June	4.2-5.0	>6.0	---	---	None	Extremely brief	Rare
		July	5.0-6.0	>6.0	---	---	None	Extremely brief	Rare
		August	5.0-6.0	>6.0	---	---	None	Extremely brief	Rare
		September	5.0-6.0	>6.0	---	---	None	Extremely brief	Rare
		October	5.0-6.0	>6.0	---	---	None	Extremely brief	Rare
		November	5.0-6.0	>6.0	---	---	None	Extremely brief	Rare
		December	5.0-6.0	>6.0	---	---	None	Extremely brief	Rare

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Wetbag-----	D		Ft	Ft	Ft				
		January	0.0-1.0	>6.0	---	---	None	Extremely brief	Rare
		February	0.0-1.0	>6.0	---	---	None	Extremely brief	Rare
		March	0.0-1.0	>6.0	---	---	None	Extremely brief	Rare
		April	0.0-1.0	>6.0	---	---	None	Extremely brief	Rare
		May	0.0-1.6	>6.0	---	---	None	Extremely brief	Rare
		June	0.0-1.6	>6.0	---	---	None	Extremely brief	Rare
		July	1.6-3.3	>6.0	---	---	None	Extremely brief	Rare
		August	2.5-4.1	>6.0	---	---	None	Extremely brief	Rare
		September	2.5-4.1	>6.0	---	---	None	Extremely brief	Rare
		October	2.5-4.1	>6.0	---	---	None	Extremely brief	Rare
		November	1.6-3.3	>6.0	---	---	None	Extremely brief	Rare
		December	0.8-2.5	>6.0	---	---	None	Extremely brief	Rare
Wetbag-----	D								
		January	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		February	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		March	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		April	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		May	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		June	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		July	1.0-2.0	>6.0	---	---	None	---	None
		August	1.0-2.0	>6.0	---	---	None	---	None
		September	1.0-2.0	>6.0	---	---	None	---	None
		October	1.0-2.0	>6.0	---	---	None	---	None
		November	1.0-2.0	>6.0	---	---	None	---	None
		December	1.0-2.0	>6.0	---	---	None	Brief	Occasional
320: Franktown-----	D	Jan-Dec	---	---	---	---	None	---	None
330: Oest-----	B	Jan-Dec	---	---	---	---	None	---	None
340: Aspocket-----	C	Jan-Dec	---	---	---	---	None	---	None
Aspocket-----	C	Jan-Dec	---	---	---	---	None	---	None
350: Leroman-----	B	Jan-Dec	---	---	---	---	None	---	None
Chenhigh-----	D	Jan-Dec	---	---	---	---	None	---	None
Celeridge-----	D	Jan-Dec	---	---	---	---	None	---	None
Dogbed-----	B	Jan-Dec	---	---	---	---	None	---	None
360: Monibasin-----	B	Jan-Dec	---	---	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Vermdig-----	C		Ft	Ft	Ft				
		January	5.0-6.0	>6.0	---	---	None	---	None
		February	3.3-5.0	>6.0	---	---	None	---	None
		March	2.5-3.3	>6.0	---	---	None	---	None
			0.0	0.0-1.2					
		April	0.0	0.0-1.2	---	---	None	---	None
			2.5-3.3	>6.0					
		May	0.0	0.0-1.2	---	---	None	---	None
			2.5-3.3	>6.0					
		June	2.5-3.3	>6.0	---	---	None	---	None
		July	3.3-5.0	>6.0	---	---	None	---	None
		September	5.0-6.0	>6.0	---	---	None	---	None
		October	5.0-6.0	>6.0	---	---	None	---	None
		November	5.0-6.0	>6.0	---	---	None	---	None
		December	5.0-6.0	>6.0	---	---	None	---	None
		August	5.0-6.0	>6.0	---	---	None	---	None
370: Celeridge-----	D	Jan-Dec	---	---	---	---	None	---	None
Gerdog-----	D	Jan-Dec	---	---	---	---	None	---	None
Loope-----	D	Jan-Dec	---	---	---	---	None	---	None
Pinew-----	D	Jan-Dec	---	---	---	---	None	---	None
380: Joecut-----	C	Jan-Dec	---	---	---	---	None	---	None
Celeridge-----	D	Jan-Dec	---	---	---	---	None	---	None
Joecut-----	C	March	2.5-3.3	>6.0	---	---	None	---	None
		April	2.5-3.3	>6.0	---	---	None	---	None
		May	3.3-4.2	>6.0	---	---	None	---	None
		June	4.2-5.0	>6.0	---	---	None	---	None
Gerdog-----	D	Jan-Dec	---	---	---	---	None	---	None
381: Heenlake-----	D	Jan-Dec	---	---	---	---	None	---	None
Loope-----	D	Jan-Dec	---	---	---	---	None	---	None
Joecut-----	C	Jan-Dec	---	---	---	---	None	---	None
Joecut-----	C	March	2.5-3.3	>6.0	---	---	None	---	None
		April	2.5-3.3	>6.0	---	---	None	---	None
		May	3.3-4.2	>6.0	---	---	None	---	None
		June	4.2-5.0	>6.0	---	---	None	---	None
382: Joecut-----	C	Jan-Dec	---	---	---	---	None	---	None
Joecut-----	C	March	2.5-3.3	>6.0	---	---	None	---	None
		April	2.5-3.3	>6.0	---	---	None	---	None
		May	3.3-4.2	>6.0	---	---	None	---	None
		June	4.2-5.0	>6.0	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
390:			Ft	Ft	Ft				
Heenlake-----	D	Jan-Dec	---	---	---	---	None	---	None
Loope-----	D	Jan-Dec	---	---	---	---	None	---	None
Chenhigh-----	D	Jan-Dec	---	---	---	---	None	---	None
391:									
Heenlake-----	D	Jan-Dec	---	---	---	---	None	---	None
Loope-----	D	Jan-Dec	---	---	---	---	None	---	None
Dogbed-----	B	Jan-Dec	---	---	---	---	None	---	None
392:									
Heenlake-----	D	Jan-Dec	---	---	---	---	None	---	None
Loope-----	D	Jan-Dec	---	---	---	---	None	---	None
400:									
Pinew-----	D	Jan-Dec	---	---	---	---	None	---	None
Carshal-----	D	Jan-Dec	---	---	---	---	None	---	None
Loope-----	D	Jan-Dec	---	---	---	---	None	---	None
Celeridge-----	D	Jan-Dec	---	---	---	---	None	---	None
401:									
Pinew-----	D	Jan-Dec	---	---	---	---	None	---	None
410:									
Wolfcut-----	B	January	---	---	---	---	None	Extremely brief	Rare
		February	---	---	---	---	None	Extremely brief	Rare
		March	---	---	---	---	None	Extremely brief	Rare
		April	---	---	---	---	None	Extremely brief	Rare
		May	---	---	---	---	None	Extremely brief	Rare
		June	---	---	---	---	None	Extremely brief	Rare
		July	---	---	---	---	None	Extremely brief	Rare
		August	---	---	---	---	None	Extremely brief	Rare
		September	---	---	---	---	None	Extremely brief	Rare
		October	---	---	---	---	None	Extremely brief	Rare
		November	---	---	---	---	None	Extremely brief	Rare
		December	---	---	---	---	None	Extremely brief	Rare

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
420: Buggin-----	D	Jan-Dec	---	---	---	---	None	---	None
430: Newcone-----	D	Jan-Dec	---	---	---	---	None	---	None
440: Dogbed-----	B	Jan-Dec	---	---	---	---	None	---	None
Celeridge-----	D	Jan-Dec	---	---	---	---	None	---	None
Carshal-----	D	Jan-Dec	---	---	---	---	None	---	None
Joecut-----	C	March	2.5-3.3	>6.0	---	---	None	---	None
		April	2.5-3.3	>6.0	---	---	None	---	None
		May	3.3-4.2	>6.0	---	---	None	---	None
		June	4.2-5.0	>6.0	---	---	None	---	None
450: Carshal-----	D	Jan-Dec	---	---	---	---	None	---	None
Loope-----	D	Jan-Dec	---	---	---	---	None	---	None
460: Toejom-----	D	Jan-Dec	---	---	---	---	None	---	None
Pimogran-----	D	Jan-Dec	---	---	---	---	None	---	None
461: Toejom-----	D	Jan-Dec	---	---	---	---	None	---	None
Pimogran-----	D	Jan-Dec	---	---	---	---	None	---	None
462: Toejom-----	D	Jan-Dec	---	---	---	---	None	---	None
Glenbrook-----	D	Jan-Dec	---	---	---	---	None	---	None
Pimogran-----	D	Jan-Dec	---	---	---	---	None	---	None
470: Sumeadow-----	A	Jan-Dec	---	---	---	---	None	---	None
Lostridge-----	B	Jan-Dec	---	---	---	---	None	---	None
471: Sumeadow-----	A	Jan-Dec	---	---	---	---	None	---	None
Sumeadow-----	A	Jan-Dec	---	---	---	---	None	---	None
480: Aspetill-----	B	Jan-Dec	---	---	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Aspetill-----	B	Jan-Dec	---	---	---	---	None	---	None
481: Aspetill-----	B	Jan-Dec	---	---	---	---	None	---	None
Aspetill-----	B	Jan-Dec	---	---	---	---	None	---	None
490: Cloudburst-----	A	Jan-Dec	---	---	---	---	None	---	None
Murain-----	A	Jan-Dec	---	---	---	---	None	---	None
491: Cloudburst-----	A	Jan-Dec	---	---	---	---	None	---	None
Murain-----	A	Jan-Dec	---	---	---	---	None	---	None
Hardtil-----	D	April	0.6-1.4	1.7-1.7	---	---	None	---	None
		May	0.6-1.4	1.7-1.7	---	---	None	---	None
		June	0.6-1.4	1.7-1.7	---	---	None	---	None
		July	1.2-1.7	1.7-1.7	---	---	None	---	None
500: Chrisflat-----	B	January	---	---	---	---	None	Extremely brief	Very rare
		February	---	---	---	---	None	Extremely brief	Very rare
		March	---	---	---	---	None	Extremely brief	Very rare
		April	---	---	---	---	None	Extremely brief	Very rare
		May	---	---	---	---	None	Extremely brief	Very rare
		June	---	---	---	---	None	Extremely brief	Very rare
		July	---	---	---	---	None	Extremely brief	Very rare
		August	---	---	---	---	None	Extremely brief	Very rare
		September	---	---	---	---	None	Extremely brief	Very rare
		October	---	---	---	---	None	Extremely brief	Very rare
		November	---	---	---	---	None	Extremely brief	Very rare
		December	---	---	---	---	None	Extremely brief	Very rare
510: Lithnip-----	D	Jan-Dec	---	---	---	---	None	---	None
Fishsnooze-----	B	Jan-Dec	---	---	---	---	None	---	None
511: Snowtell-----	D	Jan-Dec	---	---	---	---	None	---	None
Forsell-----	A	Jan-Dec	---	---	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
512: Snowtell-----	D	Jan-Dec	---	---	---	---	None	---	None
513: Holdon-----	A	Jan-Dec	---	---	---	---	None	---	None
520: Canfire-----	D	Jan-Dec	---	---	---	---	None	---	None
Crispy-----	D	Jan-Dec	---	---	---	---	None	---	None
530: Elaero-----	D	Jan-Dec	---	---	---	---	None	---	None
Lockgate-----	A	Jan-Dec	---	---	---	---	None	---	None
Granhogany-----	D	Jan-Dec	---	---	---	---	None	---	None
Granidry-----	D	Jan-Dec	---	---	---	---	None	---	None
531: Elaero-----	D	Jan-Dec	---	---	---	---	None	---	None
Elaero-----	D	Jan-Dec	---	---	---	---	None	---	None
532: Elaero-----	D	Jan-Dec	---	---	---	---	None	---	None
Granidry-----	D	Jan-Dec	---	---	---	---	None	---	None
540: Lostcannon, moist-----	A	Jan-Dec	---	---	---	---	None	---	None
Lostcannon-----	A	Jan-Dec	---	---	---	---	None	---	None
560: Dunderberg-----	A	Jan-Dec	---	---	---	---	None	---	None
Dunderberg, warm-----	A	Jan-Dec	---	---	---	---	None	---	None
Conwayridge-----	A	Jan-Dec	---	---	---	---	None	---	None
Dunderberg, moist-----	A	Jan-Dec	---	---	---	---	None	---	None
561: Dunderberg-----	A	Jan-Dec	---	---	---	---	None	---	None
Dunderberg, warm-----	A	Jan-Dec	---	---	---	---	None	---	None
Dunderberg, moist-----	A	Jan-Dec	---	---	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
570:			Ft	Ft	Ft				
Angelwhine-----	B	Jan-Dec	---	---	---	---	None	---	None
Hawkinspeak-----	B	Jan-Dec	---	---	---	---	None	---	None
Hawkridge-----	D	Jan-Dec	---	---	---	---	None	---	None
580:									
Murain-----	A	Jan-Dec	---	---	---	---	None	---	None
Shorthike-----	A	Jan-Dec	---	---	---	---	None	---	None
Murain, moist-----	A	Jan-Dec	---	---	---	---	None	---	None
581:									
Murain-----	A	Jan-Dec	---	---	---	---	None	---	None
Murain-----	A	Jan-Dec	---	---	---	---	None	---	None
590:									
Loope-----	D	Jan-Dec	---	---	---	---	None	---	None
Heenlake-----	D	Jan-Dec	---	---	---	---	None	---	None
Carshal-----	D	Jan-Dec	---	---	---	---	None	---	None
591:									
Loope-----	D	Jan-Dec	---	---	---	---	None	---	None
Heenlake-----	D	Jan-Dec	---	---	---	---	None	---	None
Celeridge-----	D	Jan-Dec	---	---	---	---	None	---	None
592:									
Loope-----	D	Jan-Dec	---	---	---	---	None	---	None
Pinew-----	D	Jan-Dec	---	---	---	---	None	---	None
Heenlake-----	D	Jan-Dec	---	---	---	---	None	---	None
600:									
Snowtell-----	D	Jan-Dec	---	---	---	---	None	---	None
Sonorapass-----	D	Jan-Dec	---	---	---	---	None	---	None
610:									
Forsell-----	A	Jan-Dec	---	---	---	---	None	---	None
Snowtell-----	D	Jan-Dec	---	---	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
611: Forsell-----	A	Jan-Dec	---	---	---	---	None	---	None
Snowtell-----	D	Jan-Dec	---	---	---	---	None	---	None
620: Indian Creek-----	D	Jan-Dec	---	---	---	---	None	---	None
630: Olac-----	D	Jan-Dec	---	---	---	---	None	---	None
Flex-----	D	Jan-Dec	---	---	---	---	None	---	None
Duco-----	D	Jan-Dec	---	---	---	---	None	---	None
640: Koontz-----	D	Jan-Dec	---	---	---	---	None	---	None
Nosrac-----	C	Jan-Dec	---	---	---	---	None	---	None
650: Shree-----	C	January	---	---	---	---	None	Very brief	Rare
		February	---	---	---	---	None	Very brief	Rare
		March	---	---	---	---	None	Very brief	Rare
		April	---	---	---	---	None	Very brief	Rare
		May	---	---	---	---	None	Very brief	Rare
		June	---	---	---	---	None	Very brief	Rare
		July	---	---	---	---	None	Very brief	Rare
		August	---	---	---	---	None	Very brief	Rare
		September	---	---	---	---	None	Very brief	Rare
		October	---	---	---	---	None	Very brief	Rare
		November	---	---	---	---	None	Very brief	Rare
		December	---	---	---	---	None	Very brief	Rare
651: Shree-----	C	January	---	---	---	---	None	Very brief	Rare
		February	---	---	---	---	None	Very brief	Rare
		March	---	---	---	---	None	Very brief	Rare
		April	---	---	---	---	None	Very brief	Rare
		May	---	---	---	---	None	Very brief	Rare
		June	---	---	---	---	None	Very brief	Rare
		July	---	---	---	---	None	Very brief	Rare
		August	---	---	---	---	None	Very brief	Rare
		September	---	---	---	---	None	Very brief	Rare
		October	---	---	---	---	None	Very brief	Rare
		November	---	---	---	---	None	Very brief	Rare
		December	---	---	---	---	None	Very brief	Rare
Holbrook-----	B	January	---	---	---	---	None	Very brief	Rare
		February	---	---	---	---	None	Very brief	Rare
		March	---	---	---	---	None	Very brief	Rare
		April	---	---	---	---	None	Very brief	Rare
		May	---	---	---	---	None	Very brief	Rare
		June	---	---	---	---	None	Very brief	Rare
		July	---	---	---	---	None	Very brief	Rare
		August	---	---	---	---	None	Very brief	Rare
		September	---	---	---	---	None	Very brief	Rare
		October	---	---	---	---	None	Very brief	Rare
		November	---	---	---	---	None	Very brief	Rare
		December	---	---	---	---	None	Very brief	Rare

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
660: Delhew-----	A	Jan-Dec	---	---	---	---	None	---	None
Grandridge-----	D	Jan-Dec	---	---	---	---	None	---	None
Bakscratch-----	D	Jan-Dec	---	---	---	---	None	---	None
670: Springmeyer-----	C	Jan-Dec	---	---	---	---	None	---	None
671: Springmeyer-----	C	Jan-Dec	---	---	---	---	None	---	None
Cassiro-----	D	Jan-Dec	---	---	---	---	None	---	None
680: Rolldown-----	B	Jan-Dec	---	---	---	---	None	---	None
Mountpatterson-----	D	Jan-Dec	---	---	---	---	None	---	None
700: Coldtree-----	A	Jan-Dec	---	---	---	---	None	---	None
710: Bakscratch-----	D	Jan-Dec	---	---	---	---	None	---	None
Grandridge-----	D	Jan-Dec	---	---	---	---	None	---	None
McTom-----	B	Jan-Dec	---	---	---	---	None	---	None
720: Nohelp-----	D	Jan-Dec	---	---	---	---	None	---	None
Joenchris-----	D	Jan-Dec	---	---	---	---	None	---	None
730: Burchflat-----	B	Jan-Dec	---	---	---	---	None	---	None
Loope-----	D	Jan-Dec	---	---	---	---	None	---	None
731: Burchflat-----	B	Jan-Dec	---	---	---	---	None	---	None
Celeridge-----	D	Jan-Dec	---	---	---	---	None	---	None
Loope-----	D	Jan-Dec	---	---	---	---	None	---	None
740: Jackflat-----	B	Jan-Dec	---	---	---	---	None	---	None
Grandridge-----	D	Jan-Dec	---	---	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
760: Thiefridge-----	D	Jan-Dec	---	---	---	---	None	---	None
Thiefridge-----	D	Jan-Dec	---	---	---	---	None	---	None
770: Sweetmount-----	D	Jan-Dec	---	---	---	---	None	---	None
Hawkinspeak-----	B	Jan-Dec	---	---	---	---	None	---	None
Hawkridge-----	D	Jan-Dec	---	---	---	---	None	---	None
780: Granhogany-----	D	Jan-Dec	---	---	---	---	None	---	None
790: Dab-----	B	Jan-Dec	---	---	---	---	None	---	None
Dab-----	B	Jan-Dec	---	---	---	---	None	---	None
791: Dab-----	B	Jan-Dec	---	---	---	---	None	---	None
Longday-----	B	Jan-Dec	---	---	---	---	None	---	None
Thiefridge-----	D	Jan-Dec	---	---	---	---	None	---	None
792: Dab-----	B	Jan-Dec	---	---	---	---	None	---	None
Aspocket-----	C	Jan-Dec	---	---	---	---	None	---	None
Hawkridge-----	D	Jan-Dec	---	---	---	---	None	---	None
800: Grandridge-----	D	Jan-Dec	---	---	---	---	None	---	None
Delhew-----	A	Jan-Dec	---	---	---	---	None	---	None
801: Grandridge-----	D	Jan-Dec	---	---	---	---	None	---	None
Delhew-----	A	Jan-Dec	---	---	---	---	None	---	None
Bullville-----	C	Jan-Dec	---	---	---	---	None	---	None
810: Corbett-----	B	Jan-Dec	---	---	---	---	None	---	None
Toiyabe-----	D	Jan-Dec	---	---	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
820: Freelpeak-----	B	Jan-Dec	---	---	---	---	None	---	None
Windyridge-----	D	Jan-Dec	---	---	---	---	None	---	None
830: Windyridge-----	D	Jan-Dec	---	---	---	---	None	---	None
Freelpeak-----	B	Jan-Dec	---	---	---	---	None	---	None
840: Lavaspring-----	D	January	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		February	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		March	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		April	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		May	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		June	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		July	2.0-3.0	>6.0	---	---	None	---	None
		August	2.0-3.0	>6.0	---	---	None	---	None
		September	2.0-3.0	>6.0	---	---	None	---	None
		October	2.0-3.0	>6.0	---	---	None	---	None
		November	1.7-2.5	>6.0	---	---	None	---	None
		December	1.0-2.0	>6.0	---	---	None	Brief	Occasional
Trespass-----	B	January	1.6-3.3	>6.0	---	---	None	Very brief	Rare
		February	1.6-3.3	>6.0	---	---	None	Very brief	Rare
		March	1.6-3.3	>6.0	---	---	None	Very brief	Rare
		April	1.6-3.3	>6.0	---	---	None	Very brief	Rare
		May	1.6-3.3	>6.0	---	---	None	Very brief	Rare
		June	1.6-3.3	>6.0	---	---	None	Very brief	Rare
		July	2.5-5.0	>6.0	---	---	None	Very brief	Rare
		August	2.5-5.0	>6.0	---	---	None	Very brief	Rare
		September	2.5-5.0	>6.0	---	---	None	Very brief	Rare
		October	2.5-5.0	>6.0	---	---	None	Very brief	Rare
		November	2.5-5.0	>6.0	---	---	None	Very brief	Rare
		December	2.5-5.0	>6.0	---	---	None	Very brief	Rare
Lavaspring-----	D	January	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		February	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		March	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		April	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		May	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		June	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		July	1.0-2.0	>6.0	---	---	None	---	None
		August	1.0-2.0	>6.0	---	---	None	---	None
		September	1.0-2.0	>6.0	---	---	None	---	None
		October	1.0-2.0	>6.0	---	---	None	---	None
		November	0.0-2.0	>6.0	---	---	None	---	None
		December	0.0-2.0	>6.0	---	---	None	Brief	Occasional
850: Lunder-----	D	Jan-Dec	---	---	---	---	None	---	None
851: Lunder-----	D	Jan-Dec	---	---	---	---	None	---	None
Leviathan-----	C	Jan-Dec	---	---	---	---	None	---	None
860: Hardnut-----	D	Jan-Dec	---	---	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Ocashe-----	D	Jan-Dec	---	---	---	---	None	---	None
870: Epvip-----	D	Jan-Dec	---	---	---	---	None	---	None
Domehill-----	D	Jan-Dec	---	---	---	---	None	---	None
Ashflat-----	B	Jan-Dec	---	---	---	---	None	---	None
871: Halfash-----	D	Jan-Dec	---	---	---	---	None	---	None
Domehill-----	D	Jan-Dec	---	---	---	---	None	---	None
872: Epvip-----	D	Jan-Dec	---	---	---	---	None	---	None
Vetash-----	B	Jan-Dec	---	---	---	---	None	---	None
Epvip-----	D	Jan-Dec	---	---	---	---	None	---	None
873: Epvip-----	D	Jan-Dec	---	---	---	---	None	---	None
Hardnut-----	D	Jan-Dec	---	---	---	---	None	---	None
Vetash-----	B	Jan-Dec	---	---	---	---	None	---	None
880: Mopana-----	D	Jan-Dec	---	---	---	---	None	---	None
890: Masonic-----	C	Jan-Dec	---	---	---	---	None	---	None
Epvip-----	D	Jan-Dec	---	---	---	---	None	---	None
Domehill-----	D	Jan-Dec	---	---	---	---	None	---	None
900: Brokenhoe-----	D	Jan-Dec	---	---	---	---	None	---	None
910: Indian Creek-----	D	Jan-Dec	---	---	---	---	None	---	None

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Haybourne-----	A	January	---	---	---	---	None	Very brief	Rare
		February	---	---	---	---	None	Very brief	Rare
		March	---	---	---	---	None	Very brief	Rare
		April	---	---	---	---	None	Very brief	Rare
		May	---	---	---	---	None	Very brief	Rare
		June	---	---	---	---	None	Very brief	Rare
		July	---	---	---	---	None	Very brief	Rare
		August	---	---	---	---	None	Very brief	Rare
		September	---	---	---	---	None	Very brief	Rare
		October	---	---	---	---	None	Very brief	Rare
		November	---	---	---	---	None	Very brief	Rare
		December	---	---	---	---	None	Very brief	Rare
920: Aquic Torrifluvents-----	A	January	2.5-3.3	>6.0	---	---	None	Brief	Rare
		February	2.5-3.3	>6.0	---	---	None	Brief	Rare
		March	2.5-3.3	>6.0	---	---	None	Brief	Rare
		April	2.5-3.3	>6.0	---	---	None	Brief	Rare
		May	2.5-3.3	>6.0	---	---	None	Brief	Rare
		June	2.5-3.3	>6.0	---	---	None	Brief	Rare
		July	2.9-3.7	>6.0	---	---	None	Brief	Rare
		August	3.3-4.2	>6.0	---	---	None	Brief	Rare
		September	3.7-4.6	>6.0	---	---	None	Brief	Rare
		October	3.7-4.6	>6.0	---	---	None	Brief	Rare
		November	3.3-4.2	>6.0	---	---	None	Brief	Rare
		December	2.9-3.7	>6.0	---	---	None	Brief	Rare
Conway-----	A	January	0.5-4.0	>6.0	---	---	None	Brief	Occasional
		February	0.5-4.0	>6.0	---	---	None	Brief	Occasional
		March	0.5-4.0	>6.0	---	---	None	Brief	Occasional
		April	0.5-4.0	>6.0	---	---	None	Brief	Occasional
		May	0.5-4.0	>6.0	---	---	None	Brief	Occasional
		June	0.5-4.0	>6.0	---	---	None	Brief	Occasional
		July	1.0-4.0	>6.0	---	---	None	---	None
		August	2.5-5.0	>6.0	---	---	None	---	None
		September	2.5-5.0	>6.0	---	---	None	---	None
		October	2.5-5.0	>6.0	---	---	None	---	None
		November	2.5-5.0	>6.0	---	---	None	---	None
		December	1.0-4.0	>6.0	---	---	None	Brief	Occasional
Torrifluventic Haploxerolls-----	A	January	---	---	---	---	None	Brief	Rare
		February	---	---	---	---	None	Brief	Rare
		March	---	---	---	---	None	Brief	Rare
		April	---	---	---	---	None	Brief	Rare
		May	---	---	---	---	None	Brief	Rare
		June	---	---	---	---	None	Brief	Rare
		July	---	---	---	---	None	Brief	Rare
		August	---	---	---	---	None	Brief	Rare
		September	---	---	---	---	None	Brief	Rare
		October	---	---	---	---	None	Brief	Rare
		November	---	---	---	---	None	Brief	Rare
		December	---	---	---	---	None	Brief	Rare
930: Lavaspring-----	B	January	2.5-4.2	>6.0	---	---	None	Brief	Occasional
		February	2.5-4.2	>6.0	---	---	None	Brief	Occasional
		March	2.5-4.2	>6.0	---	---	None	Brief	Occasional
		April	2.5-4.2	>6.0	---	---	None	Brief	Occasional
		May	2.5-4.2	>6.0	---	---	None	Brief	Occasional
		June	2.5-4.2	>6.0	---	---	None	Brief	Occasional
		July	3.3-5.0	>6.0	---	---	None	---	None
		August	3.3-5.0	>6.0	---	---	None	---	None
		September	3.3-5.0	>6.0	---	---	None	---	None
		October	3.3-5.0	>6.0	---	---	None	---	None
		November	3.3-5.0	>6.0	---	---	None	---	None
		December	2.5-4.2	>6.0	---	---	None	Brief	Occasional

TABLE 27.-- Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Lavaspring-----	D		Ft	Ft	Ft				
		January	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		February	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		March	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		April	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		May	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		June	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		July	2.0-3.0	>6.0	---	---	None	---	None
		August	2.0-3.0	>6.0	---	---	None	---	None
		September	2.0-3.0	>6.0	---	---	None	---	None
		October	2.0-3.0	>6.0	---	---	None	---	None
		November	1.7-2.5	>6.0	---	---	None	---	None
		December	1.0-2.0	>6.0	---	---	None	Brief	Occasional
960: Rose Creek-----	B								
		January	1.5-3.0	>6.0	---	---	None	---	None
		February	1.5-3.0	>6.0	---	---	None	Long	Frequent
		March	1.5-3.0	>6.0	---	---	None	Long	Frequent
		April	1.5-3.0	>6.0	---	---	None	Long	Frequent
		May	1.5-3.0	>6.0	---	---	None	Long	Frequent
		June	1.5-3.0	>6.0	---	---	None	Long	Frequent
		July	1.5-3.0	>6.0	---	---	None	---	None
		December	1.5-3.0	>6.0	---	---	None	---	None
998: Dumps-----	---								
		Jan-Dec	---	---	---	---	None	---	None
Pits-----	---								
		Jan-Dec	---	---	---	---	None	---	None

TABLE 28.-- Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
100:		In	In				
Lithnip-----	Bedrock (lithic)	4-10	---	Indurated	Moderate	Moderate	Low
Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
Rock outcrop-----	---	---	---	---	---	---	---
101:							
Lithnip, moist-----	Bedrock (lithic)	4-10	---	Indurated	Moderate	Moderate	Low
Rock outcrop-----	---	---	---	---	---	---	---
Fishsnooze-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	High	High
102:							
Lithnip-----	Bedrock (lithic)	4-10	---	Indurated	Moderate	Moderate	Low
Rock outcrop-----	---	---	---	---	---	---	---
Fishsnooze-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	High	High
103:							
Lithnip-----	Bedrock (lithic)	4-10	---	Indurated	Moderate	Moderate	Low
Meiss-----	Bedrock (lithic)	10-20	---	Indurated	Moderate	Low	Moderate
Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
110:							
Jobsis-----	Bedrock (paralithic)	10-20	---	Weakly cemented	Low	High	High
Whittell-----	Bedrock (paralithic)	20-39	---	Moderately cemented	Low	Low	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
111:							
Whittell-----	Bedrock (paralithic)	20-39	---	Moderately cemented	Low	Low	Moderate
Jobsis-----	Bedrock (paralithic)	10-20	---	Weakly cemented	Low	High	High
Rock outcrop-----	---	---	---	---	---	---	---
112:							
Jobsis-----	Bedrock (paralithic)	10-20	---	Weakly cemented	Low	High	High
Whittell-----	Bedrock (paralithic)	20-39	---	Moderately cemented	Low	Low	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
113:							
Whittell-----	Bedrock (paralithic)	20-39	---	Moderately cemented	Low	Low	Moderate
Jobsis-----	Bedrock (paralithic)	10-20	---	Weakly cemented	Low	High	High
Rock outcrop-----	---	---	---	---	---	---	---
120:							
Toiyabe-----	Bedrock (paralithic)	10-20	---	Weakly cemented	Low	Moderate	Moderate

TABLE 28.-- Soil Features

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
Corbett-----	Bedrock (paralithic)	20-40	---	Weakly cemented	Low	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
121: Toiyabe-----	Bedrock (paralithic)	10-20	---	Weakly cemented	Low	Moderate	Moderate
Corbett-----	Bedrock (paralithic)	20-40	---	Weakly cemented	Low	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
122: Toiyabe-----	Bedrock (paralithic)	10-20	---	Weakly cemented	Low	Moderate	Moderate
Corbett-----	Bedrock (paralithic)	20-40	---	Weakly cemented	Low	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
130: Sofgran-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	High	High
Klauspeak-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	Moderate	Moderate
Temo-----	Bedrock (paralithic)	8-20	---	Weakly cemented	Low	Moderate	Moderate
131: Sofgran-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	High	High
Temo-----	Bedrock (paralithic)	8-20	---	Weakly cemented	Low	Moderate	Moderate
Shalgran-----	Bedrock (paralithic)	10-20	---	Weakly cemented	Low	Moderate	Moderate
132: Sofgran-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	High	High
Temo-----	Bedrock (paralithic)	8-20	---	Weakly cemented	Low	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
140: Temo-----	Bedrock (paralithic)	8-20	---	Weakly cemented	Low	Moderate	Moderate
Dagget-----	Bedrock (paralithic)	40-60	---	Moderately cemented	Low	Low	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
150: Mottskel-----	---	---	---	---	Low	Moderate	Low
160: Hopeval-----	---	---	---	---	High	Moderate	Moderate
Hopeval-----	---	---	---	---	High	Moderate	Moderate
162: Corralval-----	---	---	---	---	Moderate	Moderate	Moderate

TABLE 28.-- Soil Features

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
Hopeval-----	---	---	---	---	High	Moderate	Moderate
170: Burnlake-----	---	---	---	---	Moderate	Moderate	Low
Roadcat-----	---	---	---	---	Low	Moderate	Moderate
171: Stumpatil-----	---	---	---	---	Moderate	Moderate	Moderate
Morscour-----	Bedrock (paralithic)	4-10	---	Moderately cemented	Moderate	Moderate	Moderate
172: Stumpatil-----	---	---	---	---	Moderate	Moderate	Moderate
173: Stumpatil-----	---	---	---	---	Moderate	Moderate	Moderate
174: Stumpatil-----	---	---	---	---	Moderate	Moderate	Moderate
Sonorapass-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Moderate
Snowtell-----	Bedrock (lithic)	4-10	---	Indurated	Moderate	Moderate	Moderate
180: Shalgran-----	Bedrock (paralithic)	10-20	---	Weakly cemented	Low	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
190: Hopeval-----	---	---	---	---	High	Moderate	Moderate
Hopeval-----	---	---	---	---	High	Moderate	Moderate
200: Cavebear-----	---	---	---	---	Low	Moderate	Moderate
Hopeval-----	---	---	---	---	High	Moderate	Moderate
Hopeval-----	---	---	---	---	High	Moderate	Moderate
210: Waterpeak-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	Moderate	Low
Rock outcrop-----	---	---	---	---	---	---	---
211: Waterpeak-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	Moderate	Low
Buggin-----	Bedrock (paralithic)	10-14	---	Moderately cemented	Low	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
212: Waterpeak-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	Moderate	Low
Sofgran-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	High	High
Temo-----	Bedrock (paralithic)	8-20	---	Weakly cemented	Low	Moderate	Moderate

TABLE 28.-- Soil Features

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
220: Hardtil-----	Bedrock (lithic)	10-20	---	Indurated	Moderate	Moderate	Moderate
Alpineco-----	Bedrock (lithic)	40-60	---	Indurated	Moderate	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
221: Hardtil-----	Bedrock (lithic)	10-20	---	Indurated	Moderate	Moderate	Moderate
Alpineco-----	Bedrock (lithic)	40-60	---	Indurated	Moderate	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
222: Hardtil-----	Bedrock (lithic)	10-20	---	Indurated	Moderate	Moderate	Moderate
Alpineco-----	Bedrock (lithic)	40-60	---	Indurated	Moderate	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
230: Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
Thiefridge-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Moderate
Angelwhine-----	---	---	---	---	Moderate	Moderate	Low
231: Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
232: Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
Hawkridge-----	Bedrock (lithic)	7-14	---	Indurated	Moderate	Moderate	Low
233: Angelwhine-----	---	---	---	---	Moderate	Moderate	Low
Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
Hawkridge-----	Bedrock (lithic)	7-14	---	Indurated	Moderate	Moderate	Low
234: Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
Thiefridge-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Moderate
235: Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
Angelwhine-----	---	---	---	---	Moderate	Moderate	Low
240: Granylith-----	Bedrock (lithic)	10-20	---	Indurated	Moderate	Moderate	Moderate
Hargran-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	High	High
Rock outcrop-----	---	---	---	---	---	---	---

TABLE 28.-- Soil Features

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
250: Florand-----	Bedrock (paralithic)	40-60	---	Moderately cemented	Moderate	High	High
Lostridge-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	High	High
Fishsnooze-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	High	High
260: Hawkridge-----	Bedrock (lithic)	7-14	---	Indurated	Moderate	Moderate	Low
Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
261: Hawkridge-----	Bedrock (lithic)	7-14	---	Indurated	Moderate	Moderate	Low
Lithnip-----	Bedrock (lithic)	4-10	---	Indurated	Moderate	Moderate	Low
Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
262: Domehill-----	Bedrock (lithic)	7-14	---	Indurated	Moderate	Moderate	Low
Kiote-----	---	---	---	---	Moderate	Moderate	Low
270: Duco-----	Bedrock (lithic)	10-20	---	Indurated	Moderate	Moderate	Low
Smallcone-----	Bedrock (paralithic)	4-10	---	Moderately cemented	Moderate	High	High
Cagle-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	Moderate	Low
271: Duco-----	Bedrock (lithic)	10-20	---	Indurated	Moderate	Moderate	Low
Vetagrande-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	Moderate	Low
Pinenut-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
280: Longcreek-----	Bedrock (lithic)	14-20	---	Indurated	Low	Moderate	Low
Devada-----	Bedrock (lithic)	12-20	---	Indurated	Low	Moderate	Low
290: Pernty-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Low
Chen-----	Bedrock (lithic)	12-20	---	Indurated	Moderate	Moderate	Low
310: Bagval-----	---	---	---	---	Moderate	Moderate	Low
Bagval-----	---	---	---	---	Moderate	Moderate	Low
Wetbag-----	---	---	---	---	High	Moderate	Low
Wetbag-----	---	---	---	---	High	Moderate	Low
320: Franktown-----	Bedrock (lithic)	6-20	---	Very strongly cemented	Moderate	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---

TABLE 28.-- Soil Features

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
330: Oest-----	---	In	In	---	Moderate	Moderate	Low
340: Aspocket-----	Bedrock (paralithic)	40-60	---	Moderately cemented	Moderate	Moderate	Low
Aspocket-----	Bedrock (paralithic)	40-60	---	Moderately cemented	Moderate	Moderate	Low
350: Leroman-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	Low
Chenhigh-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Low
Celeridge-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Low
Dogbed-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	Moderate	Low
360: Monibasin-----	---	---	---	---	Moderate	Moderate	Low
Vermdig-----	---	---	---	---	Moderate	Moderate	Low
370: Celeridge-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Low
Gerdog-----	Bedrock (lithic)	7-14	---	Indurated	Moderate	Moderate	Low
Loope-----	Bedrock (lithic)	14-20	---	Very strongly cemented	Moderate	Moderate	Low
Pinew-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
380: Joecut-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	Moderate	Low
Celeridge-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Low
Joecut-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	Moderate	Moderate
Gerdog-----	Bedrock (lithic)	7-14	---	Indurated	Moderate	Moderate	Low
381: Heenlake-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	Low
Loope-----	Bedrock (lithic)	14-20	---	Very strongly cemented	Moderate	Moderate	Low
Joecut-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	Moderate	Moderate
Joecut-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	Moderate	Moderate
382: Joecut-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	Moderate	Moderate
Joecut-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	Moderate	Moderate
390: Heenlake-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	Low

TABLE 28.-- Soil Features

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
Loope-----	Bedrock (lithic)	In 14-20	In ---	Very strongly cemented	Moderate	Moderate	Low
Chenhigh-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Low
391: Heenlake-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	Low
Loope-----	Bedrock (lithic)	14-20	---	Very strongly cemented	Moderate	Moderate	Low
Dogbed-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	Moderate	Low
392: Heenlake-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	Low
Loope-----	Bedrock (lithic)	14-20	---	Very strongly cemented	Moderate	Moderate	Low
400: Pinew-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Carshal-----	Bedrock (paralithic)	4-10	---	Moderately cemented	Moderate	Moderate	Low
Loope-----	Bedrock (lithic)	14-20	---	Very strongly cemented	Moderate	Moderate	Low
Celeridge-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Low
401: Pinew-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Rock outcrop-----	---	---	---	---	---	---	---
410: Wolfcut-----	---	---	---	---	Moderate	Moderate	Moderate
420: Buggin-----	Bedrock (paralithic)	10-14	---	Moderately cemented	Low	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
430: Newcone-----	Bedrock (paralithic)	3-10	---	Moderately cemented	Moderate	High	High
Rock outcrop-----	---	---	---	---	---	---	---
440: Dogbed-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	Moderate	Low
Celeridge-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Low
Carshal-----	Bedrock (paralithic)	4-10	---	Moderately cemented	Moderate	Moderate	Low
Joecut-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	Moderate	Moderate
450: Carshal-----	Bedrock (paralithic)	4-10	---	Moderately cemented	Moderate	Moderate	Low

TABLE 28.-- Soil Features

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
Loope-----	Bedrock (lithic)	14-20	---	Very strongly cemented	Moderate	Moderate	Low
Rock outcrop-----	---	---	---	---	---	---	---
460: Toejom-----	Bedrock (paralithic)	14-20	---	Weakly cemented	Low	Moderate	Low
Pimogran-----	Bedrock (paralithic)	14-20	---	Weakly cemented	Low	Moderate	Low
Rock outcrop-----	---	---	---	---	---	---	---
461: Toejom-----	Bedrock (paralithic)	14-20	---	Weakly cemented	Low	Moderate	Low
Pimogran-----	Bedrock (paralithic)	14-20	---	Weakly cemented	Low	Moderate	Low
Rock outcrop-----	---	---	---	---	---	---	---
462: Toejom-----	Bedrock (paralithic)	14-20	---	Weakly cemented	Low	Moderate	Low
Glenbrook-----	Bedrock (paralithic)	10-20	---	Weakly cemented	Low	Moderate	Low
Pimogran-----	Bedrock (paralithic)	14-20	---	Weakly cemented	Low	Moderate	Low
470: Sumeadow-----	---	---	---	---	Moderate	Moderate	Moderate
Lostridge-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	High	High
471: Sumeadow-----	---	---	---	---	Moderate	Moderate	Moderate
Sumeadow-----	---	---	---	---	Moderate	Moderate	Moderate
480: Aspetill-----	---	---	---	---	Moderate	Moderate	Low
Aspetill-----	---	---	---	---	Moderate	Moderate	Low
481: Aspetill-----	---	---	---	---	Moderate	Moderate	Low
Aspetill-----	---	---	---	---	Moderate	Moderate	Low
490: Cloudburst-----	---	---	---	---	Moderate	Moderate	Low
Murain-----	---	---	---	---	Moderate	Moderate	Low
491: Cloudburst-----	---	---	---	---	Moderate	Moderate	Low
Murain-----	---	---	---	---	Moderate	Moderate	Low
Hardtil-----	Bedrock (lithic)	10-20	---	Indurated	Moderate	Moderate	Moderate
500: Chrisflat-----	---	---	---	---	Moderate	Moderate	Low

TABLE 28.-- Soil Features

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
510: Rubble land-----	---	---	---	---	---	---	---
Lithnip-----	Bedrock (lithic)	4-10	---	Indurated	Moderate	Moderate	Low
Rock outcrop-----	---	---	---	---	---	---	---
Fishsnooze-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	High	High
511: Rock outcrop-----	---	---	---	---	---	---	---
Snowtell-----	Bedrock (lithic)	4-10	---	Indurated	Moderate	Moderate	Moderate
Forsell-----	Bedrock (lithic)	60-80	---	Indurated	Moderate	Moderate	Moderate
512: Rock outcrop-----	---	---	---	---	---	---	---
Snowtell-----	Bedrock (lithic)	4-10	---	Indurated	Moderate	Moderate	Moderate
513: Rubble land-----	---	---	---	---	---	---	---
Holdon-----	Bedrock (lithic)	40-60	---	Indurated	Moderate	Moderate	Low
Rock outcrop-----	---	---	---	---	---	---	---
520: Canfire-----	Bedrock (lithic)	14-20	---	Very strongly cemented	Moderate	Moderate	Low
Crispy-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Rock outcrop-----	---	---	---	---	---	---	---
530: Elaero-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	Low
Lockgate-----	Bedrock (paralithic)	40-60	---	Moderately cemented	Moderate	Moderate	Low
Granhogany-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Granidry-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
531: Elaero-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	Low
Elaero-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	Low
532: Elaero-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	Low
Granidry-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Rock outcrop-----	---	---	---	---	---	---	---
540: Lostcannon, moist-----	---	---	---	---	Moderate	Moderate	Low
Lostcannon-----	---	---	---	---	Moderate	Moderate	Low

TABLE 28.-- Soil Features

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
560:							
Dunderberg-----	---	---	---	---	Moderate	Moderate	Low
Dunderberg, warm-----	---	---	---	---	Moderate	Moderate	Low
Conwayridge-----	---	---	---	---	Moderate	Moderate	Low
Dunderberg, moist-----	---	---	---	---	Moderate	Moderate	Low
561:							
Dunderberg-----	---	---	---	---	Moderate	Moderate	Low
Dunderberg, warm-----	---	---	---	---	Moderate	Moderate	Low
Dunderberg, moist-----	---	---	---	---	Moderate	Moderate	Low
570:							
Angelwhine-----	---	---	---	---	Moderate	Moderate	Low
Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
Hawkridge-----	Bedrock (lithic)	7-14	---	Indurated	Moderate	Moderate	Low
580:							
Murain-----	---	---	---	---	Moderate	Moderate	Low
Shorthike-----	---	---	---	---	Moderate	Moderate	Low
Murain, moist-----	---	---	---	---	Moderate	Moderate	Low
581:							
Murain-----	---	---	---	---	Moderate	Moderate	Low
Murain-----	---	---	---	---	Moderate	Moderate	Low
590:							
Loope-----	Bedrock (lithic)	14-20	---	Very strongly cemented	Moderate	Moderate	Low
Heenlake-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	Low
Carshal-----	Bedrock (paralithic)	4-10	---	Moderately cemented	Moderate	Moderate	Low
591:							
Loope-----	Bedrock (lithic)	14-20	---	Very strongly cemented	Moderate	Moderate	Low
Heenlake-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	Low
Celeridge-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Low
592:							
Loope-----	Bedrock (lithic)	14-20	---	Very strongly cemented	Moderate	Moderate	Low
Pinew-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Heenlake-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	Low
600:							
Snowtell-----	Bedrock (lithic)	4-10	---	Indurated	Moderate	Moderate	Moderate
Sonorapass-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---

TABLE 28.-- Soil Features

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
610: Forsell-----	Bedrock (lithic)	60-80	---	Indurated	Moderate	Moderate	Moderate
Snowtell-----	Bedrock (lithic)	4-10	---	Indurated	Moderate	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
611: Forsell-----	Bedrock (lithic)	60-80	---	Indurated	Moderate	Moderate	Moderate
Snowtell-----	Bedrock (lithic)	4-10	---	Indurated	Moderate	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
620: Indian Creek-----	Duripan	14-20	4-17	Indurated	Low	High	Low
630: Olac-----	Bedrock (lithic)	8-14	---	Indurated	Moderate	Moderate	Low
Flex-----	Bedrock (paralithic)	6-12	---	Moderately cemented	Moderate	Moderate	Low
Duco-----	Bedrock (lithic)	10-20	---	Indurated	Moderate	Moderate	Low
640: Koontz-----	Bedrock (paralithic)	8-20	---	Moderately cemented	Moderate	Moderate	Low
Nosrac-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	High	Low
650: Shree-----	---	---	---	---	Moderate	Moderate	Low
651: Shree-----	---	---	---	---	Moderate	Moderate	Low
Holbrook-----	---	---	---	---	Moderate	High	Low
660: Delhew-----	---	---	---	---	Moderate	Moderate	Low
Grandridge-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Bakscratch-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
670: Springmeyer-----	---	---	---	---	Moderate	High	Low
671: Springmeyer-----	---	---	---	---	Moderate	High	Low
Cassiro-----	Bedrock (paralithic)	40-65	---	Weakly cemented	Low	Moderate	Moderate
680: Rolldown-----	---	---	---	---	Moderate	Moderate	Low
Mountpatterson-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Low
Rubble land-----	---	---	---	---	---	---	---
700: Coldtree-----	Bedrock (lithic)	40-60	---	Indurated	Moderate	Moderate	Moderate
Rubble land-----	---	---	---	---	---	---	---

TABLE 28.-- Soil Features

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
710: Bakscratch-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Grandridge-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
McTom-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	Moderate	Low
720: Nohelp-----	---	---	---	---	Moderate	Moderate	Low
Joenchris-----	---	---	---	---	Moderate	Moderate	Low
730: Burchflat-----	Bedrock (lithic)	20-40	---	Very strongly cemented	Moderate	Moderate	Low
Loope-----	Bedrock (lithic)	14-20	---	Very strongly cemented	Moderate	Moderate	Low
731: Burchflat-----	Bedrock (lithic)	20-40	---	Very strongly cemented	Moderate	Moderate	Low
Celeridge-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Low
Loope-----	Bedrock (lithic)	14-20	---	Very strongly cemented	Moderate	Moderate	Low
740: Jackflat-----	Bedrock (paralithic)	40-60	---	Moderately cemented	Moderate	Moderate	Low
Grandridge-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
760: Thiefridge-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Moderate
Thiefridge-----	Bedrock (lithic)	10-20	---	Indurated	Moderate	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
770: Sweetmount-----	Bedrock (paralithic)	40-60	---	Moderately cemented	Moderate	Moderate	Low
Hawkinspeak-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	Moderate	Low
Hawkridge-----	Bedrock (lithic)	7-14	---	Indurated	Moderate	Moderate	Low
780: Granhogany-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Rock outcrop-----	---	---	---	---	---	---	---
790: Dab-----	---	---	---	---	Moderate	Moderate	Low
Dab-----	---	---	---	---	Moderate	Moderate	Low
791: Dab-----	---	---	---	---	Moderate	Moderate	Low
Longday-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	Moderate	Low
Thiefridge-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Moderate

TABLE 28.-- Soil Features

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
792: Dab-----	---	---	---	---	Moderate	Moderate	Low
Aspocket-----	Bedrock (paralithic)	40-60	---	Moderately cemented	Moderate	Moderate	Low
Hawkridge-----	Bedrock (lithic)	7-14	---	Indurated	Moderate	Moderate	Low
800: Grandridge-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Delhew-----	---	---	---	---	Moderate	Moderate	Low
801: Grandridge-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Delhew-----	---	---	---	---	Moderate	Moderate	Low
Bullville-----	Bedrock (paralithic)	20-40	---	Weakly cemented	Moderate	Moderate	Low
810: Corbett-----	Bedrock (paralithic)	20-40	---	Weakly cemented	Low	Moderate	Moderate
Toiyabe-----	Bedrock (paralithic)	10-20	---	Weakly cemented	Low	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
820: Freelpeak-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	Moderate	Moderate
Windyridge-----	Bedrock (paralithic)	4-10	---	Weakly cemented	Low	High	High
Rock outcrop-----	---	---	---	---	---	---	---
830: Windyridge-----	Bedrock (paralithic)	4-10	---	Weakly cemented	Low	High	High
Freelpeak-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	Moderate	Moderate
Rock outcrop-----	---	---	---	---	---	---	---
840: Lavaspring-----	---	---	---	---	High	Moderate	Low
Trespass-----	---	---	---	---	Moderate	Moderate	Low
Lavaspring-----	---	---	---	---	High	Moderate	Low
850: Lunder-----	Duripan	14-20	10-30	Indurated	Low	Moderate	Low
851: Lunder-----	Duripan	14-20	10-30	Indurated	Low	Moderate	Low
Leviathan-----	---	---	---	---	Moderate	Moderate	Low
860: Hardnut-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Low
Ocashe-----	Bedrock (lithic)	7-14	---	Indurated	Moderate	Moderate	Low

TABLE 28.-- Soil Features

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
870:							
Epvip-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Domehill-----	Bedrock (lithic)	7-14	---	Indurated	Moderate	Moderate	Low
Ashflat-----	---	---	---	---	Moderate	Moderate	Low
871:							
Halfash-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Domehill-----	Bedrock (lithic)	7-14	---	Indurated	Moderate	Moderate	Low
872:							
Epvip-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Vetash-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	Moderate	Low
Epvip-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
873:							
Epvip-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Hardnut-----	Bedrock (lithic)	14-20	---	Indurated	Moderate	Moderate	Low
Vetash-----	Bedrock (paralithic)	60-80	---	Moderately cemented	Moderate	Moderate	Low
880:							
Mopana-----	Duripan	14-20	40-46	Indurated	Moderate	Moderate	Low
890:							
Masonic-----	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	Low
Epvip-----	Bedrock (paralithic)	14-20	---	Moderately cemented	Moderate	Moderate	Low
Domehill-----	Bedrock (lithic)	7-14	---	Indurated	Moderate	Moderate	Low
900:							
Brokenhoe-----	Duripan	20-40	10-30	Moderately cemented	Moderate	Moderate	Low
Fisherdig-----	Duripan	14-20	10-30	Strongly cemente	Low	Low	Low
910:							
Indian Creek-----	Duripan	14-20	40-46	Indurated	Low	High	Low
Haybourne-----	---	---	---	---	Moderate	High	Low
920:							
Aquic Torrifluvents----	---	---	---	---	Low	Moderate	Low
Conway-----	---	---	---	---	High	High	Low
Torrifluventic Haploxerolls-----	---	---	---	---	Low	Moderate	Low
930:							
Lavaspring-----	---	---	---	---	High	Moderate	Low
Lavaspring-----	---	---	---	---	High	Moderate	Low
960:							
Rose Creek-----	---	---	---	---	High	High	Low

TABLE 28.-- Soil Features

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
998: Dumps-----	---	---	---	---	---	---	---
Pits-----	---	---	---	---	---	---	---
999: Water-----	---	---	---	---	---	---	---

TABLE 29.--Taxonomic Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Alpineco-----	Loamy-skeletal, mixed, superactive, frigid Oxyaquic Dystrocherepts
Angelwhine-----	Loamy-skeletal, mixed, superactive Pachic Argicryolls
Aquic Torrifluvents-----	Mesic Aquic Torrifluvents
Ashflat-----	Ashy-skeletal, glassy Vitrandic Argicryolls
Aspetill-----	Loamy-skeletal, mixed, superactive Pachic Argicryolls
Aspocket-----	Loamy-skeletal, isotic Pachic Argicryolls
Bagval-----	Fine, smectitic, frigid Typic Haploxererts
Bakscratch-----	Loamy-skeletal, mixed, superactive, shallow Xeric Argicryolls
Brokenhoe-----	Loamy-skeletal, mixed, superactive, frigid Vitritorrandic Durixerolls
Buggin-----	Sandy-skeletal, mixed, shallow Xeric Haplocryolls
Bullville-----	Loamy-skeletal, mixed, superactive Xeric Argicryolls
Burchflat-----	Loamy-skeletal, mixed, superactive, frigid Pachic Argixerolls
Burnlake-----	Loamy-skeletal, mixed, superactive, frigid Humic Dystrocherepts
Cagle-----	Fine, smectitic, mesic Aridic Argixerolls
Canfire-----	Loamy-skeletal, mixed, superactive, mesic Lithic Argixerolls
Carshal-----	Loamy-skeletal, mixed, superactive, nonacid, frigid, shallow Typic Xerorthents
Cassiro-----	Clayey-skeletal, smectitic, mesic Aridic Argixerolls
Cavebear-----	Sandy-skeletal, mixed Aquic Haplocryolls
Celeridge-----	Loamy-skeletal, mixed, superactive, frigid Lithic Argixerolls
Chen-----	Clayey-skeletal, smectitic, frigid Lithic Argixerolls
Chenhigh-----	Clayey-skeletal, mixed, superactive, frigid Lithic Argixerolls
Chrisflat-----	Loamy-skeletal, mixed, superactive, frigid Pachic Argixerolls
Cloudburst-----	Loamy-skeletal, mixed, superactive, frigid Ultic Haploxeralfs
Coldtree-----	Loamy-skeletal, isotic Xeric Haplocryalfs
Conway-----	Coarse-loamy, mixed, superactive, frigid Cumulic Endoaquolls
Conwayridge-----	Loamy-skeletal, mixed, superactive, frigid Vitrandic Argixerolls
Corbett-----	Mixed, frigid Typic Xeropsamments
Corralval-----	Loamy-skeletal, mixed, superactive Aquic Haplocryolls
Crispy-----	Loamy-skeletal, mixed, superactive, frigid, shallow Typic Argixerolls
Dab-----	Loamy-skeletal, mixed, superactive Pachic Argicryolls
Dagget-----	Sandy-skeletal, mixed Typic Cryorthents
Delhew-----	Loamy-skeletal, mixed, superactive Pachic Argicryolls
Devada-----	Clayey, smectitic, mesic Lithic Argixerolls
Dogbed-----	Loamy-skeletal, mixed, superactive, frigid Pachic Argixerolls
Domehill-----	Ashy-skeletal, glassy, frigid Lithic Argixerolls
Duco-----	Loamy-skeletal, mixed, superactive, mesic Lithic Argixerolls
Dunderberg-----	Loamy-skeletal, mixed, superactive Vitrandic Haplocryolls
Elaero-----	Loamy-skeletal, mixed, superactive, frigid Typic Argixerolls
Epvip-----	Ashy-skeletal, glassy, frigid, shallow Vitrandic Argixerolls
Fisherdig-----	Clayey-skeletal, smectitic, frigid, shallow Vitritorrandic Durixerolls
Fishsnooze-----	Loamy-skeletal, isotic Xeric Dystrocryepts
Flex-----	Loamy-skeletal, mixed, superactive, mesic, shallow Xeric Haplargids
Florand-----	Loamy-skeletal, isotic Xeric Dystrocryepts
Forsell-----	Loamy-skeletal, isotic Xeric Dystrocryepts
Franktown-----	Loamy-skeletal, mixed, superactive, frigid Lithic Ultic Haploxerolls
Freelpeak-----	Sandy-skeletal, mixed Typic Cryorthents
Gerdog-----	Loamy-skeletal, mixed, superactive, frigid Lithic Argixerolls
Glenbrook-----	Mixed, mesic, shallow Xeric Torripsamments
Grandridge-----	Loamy-skeletal, mixed, superactive, frigid, shallow Typic Argixerolls
Granhogany-----	Sandy-skeletal, mixed, frigid, shallow Entic Haploxerolls
Granidry-----	Loamy-skeletal, mixed, superactive, mesic, shallow Typic Argixerolls
Granylith-----	Sandy-skeletal, mixed Lithic Cryorthents
Halfash-----	Ashy-skeletal, glassy, frigid, shallow Vitritorrandic Argixerolls
Hardnut-----	Ashy-skeletal, glassy, frigid Lithic Argixerolls
Hardtil-----	Loamy-skeletal, mixed, superactive, frigid Humic Lithic Dystrocherepts
Hargran-----	Loamy-skeletal, mixed, superactive Oxyaquic Dystrocryepts
Hawkinspeak-----	Loamy-skeletal, mixed, superactive Pachic Argicryolls
Hawkridge-----	Loamy-skeletal, mixed, superactive, frigid Lithic Argixerolls
Haybourne-----	Coarse-loamy, mixed, superactive, mesic Xeric Haplocambids
Heenlake-----	Loamy-skeletal, mixed, superactive, frigid Typic Argixerolls
Holbrook-----	Loamy-skeletal, mixed, superactive, mesic Torriorthentic Haploxerolls
Holdon-----	Loamy-skeletal, mixed, superactive Xeric Eutrocryepts
Hopeval-----	Coarse-loamy, mixed, superactive Cumulic Cryaquolls
Indian Creek-----	Clayey, smectitic, mesic, shallow Xeric Argidurids
Jackflat-----	Loamy-skeletal, mixed, superactive Xeric Argicryolls
Jobsis-----	Sandy-skeletal, mixed, shallow Typic Cryorthents
Joecut-----	Loamy-skeletal, isotic, frigid Ultic Palexeralfs
Joenchris-----	Fine, smectitic, frigid Vertic Palexerolls
Kiote-----	Loamy-skeletal, mixed, superactive Vitrandic Argicryolls
Klauspeak-----	Sandy-skeletal, mixed Xeric Dystrocryepts
Koontz-----	Loamy-skeletal, mixed, superactive, mesic, shallow Aridic Argixerolls

TABLE 29.--Taxonomic Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Lavaspring-----	Fine-loamy, mixed, superactive Aquandic Cryaquolls
Leroman-----	Loamy-skeletal, mixed, superactive, frigid Pachic Argixerolls
Leviathan-----	Loamy-skeletal, mixed, superactive, mesic Aridic Argixerolls
Lithnip-----	Loamy-skeletal, isotic, nonacid Lithic Cryorthents
Lockgate-----	Loamy-skeletal, mixed, superactive, frigid Pachic Argixerolls
Longcreek-----	Clayey-skeletal, smectitic, mesic Lithic Argixerolls
Longday-----	Loamy-skeletal, mixed, superactive, frigid Typic Argixerolls
Loope-----	Loamy-skeletal, mixed, superactive, frigid Lithic Argixerolls
Lostcannon-----	Loamy-skeletal, mixed, superactive Pachic Argicryolls
Lostridge-----	Loamy-skeletal, isotic Xeric Dystricrypts
Lunder-----	Clayey, smectitic, mesic, shallow Abruptic Argiduridic Durixerolls
Masonic-----	Loamy-skeletal, mixed, superactive, frigid Vitrandic Argixerolls
McTom-----	Sandy-skeletal, mixed Xeric Dystricrypts
Meiss-----	Loamy, isotic Humic Lithic Dystricrypts
Monibasin-----	Loamy-skeletal, mixed, superactive Pachic Argicryolls
Mopana-----	Clayey, smectitic, frigid, shallow Vitritorrandic Durixerolls
Morscour-----	Loamy-skeletal, mixed, superactive, shallow Xeric Haplocryolls
Mottskel-----	Sandy-skeletal, mixed, mesic Torriorthentic Haploxerolls
Mountpatterson-----	Loamy-skeletal, mixed, superactive Lithic Argicryolls
Murain-----	Loamy-skeletal, mixed, superactive, frigid Pachic Argixerolls
Newcone-----	Loamy-skeletal, isotic, acid, frigid, shallow Dystric Xerorthents
Nohelp-----	Clayey-skeletal, smectitic, frigid Vitrandic Palexerolls
Nosrac-----	Loamy-skeletal, mixed, superactive, mesic Aridic Argixerolls
Ocashe-----	Ashy-skeletal, glassy, mesic Lithic Argixerolls
Oest-----	Loamy-skeletal, mixed, superactive, mesic Aridic Argixerolls
Olac-----	Loamy-skeletal, mixed, superactive, mesic Lithic Xeric Haplargids
Pernty-----	Loamy-skeletal, mixed, superactive, frigid Lithic Argixerolls
Pimogran-----	Sandy-skeletal, mixed, frigid, shallow Entic Haploxerolls
Pinenut-----	Loamy-skeletal, mixed, superactive, frigid, shallow Aridic Argixerolls
Pinew-----	Loamy-skeletal, mixed, superactive, frigid, shallow Typic Argixerolls
Roadcat-----	Sandy-skeletal, mixed, frigid Typic Haploxerepts
Rollidown-----	Loamy-skeletal, mixed, superactive Vitrandic Argicryolls
Rose Creek-----	Coarse-loamy, mixed (calcareous), superactive, mesic Fluvaquentic Endoaquolls
Shalgran-----	Sandy-skeletal, mixed, frigid, shallow Dystric Xerorthents
Shorthike-----	Loamy-skeletal, mixed, superactive, frigid Pachic Haploxerolls
Shree-----	Loamy-skeletal, mixed, superactive, mesic Aridic Argixerolls
Smallcone-----	Loamy-skeletal, mixed, active, nonacid, mesic, shallow Xeric Torriorthents
Snowtell-----	Loamy-skeletal, isotic Humic Lithic Dystricrypts
Sofgran-----	Sandy-skeletal, mixed Typic Cryorthents
Sonorapass-----	Loamy-skeletal, isotic Xeric Dystricrypts
Springmeyer-----	Fine-loamy, mixed, superactive, mesic Aridic Argixerolls
Stumpatil-----	Loamy-skeletal, isotic Umbric Xeric Haplocryalfs
Sumeadow-----	Loamy-skeletal, isotic Xeric Dystricrypts
Sweetmount-----	Loamy-skeletal, mixed, superactive Pachic Argicryolls
Temo-----	Mixed, shallow Typic Cryopsamments
Thiefride-----	Loamy-skeletal, mixed, superactive Lithic Argicryolls
Toejom-----	Sandy-skeletal, mixed, mesic, shallow Typic Xerorthents
Toiyabe-----	Mixed, frigid, shallow Typic Xeropsamments
Haploxerolls-----	Torrifluventic
Trespass-----	Mesic Torrifluventic Haploxerolls
Vermdig-----	Loamy-skeletal, mixed, superactive Vitrandic Argicryolls
Vetagrando-----	Fine-loamy, mixed, superactive Aquic Argicryolls
Vetash-----	Loamy-skeletal, mixed, superactive, frigid Pachic Argixerolls
Waterpeak-----	Ashy-skeletal, glassy, frigid Vitrandic Argixerolls
Wetbag-----	Sandy-skeletal, mixed Pachic Haplocryolls
Whittell-----	Fine, smectitic Vertic Cryaquolls
Windyridge-----	Sandy-skeletal, mixed Typic Cryorthents
Wolfcut-----	Sandy-skeletal, mixed, shallow Typic Cryorthents
	Loamy-skeletal, mixed, superactive, frigid Ultic Palexeralfs

Appendix - Index of Plant Common and Scientific Names and Plant Symbols

Local Common Name	Scientific Name	Plant Symbol
alkali sacaton	<i>Sporobolus airoides</i>	SPAI
altered andesite buckwheat	<i>Eriogonum robustum</i>	ERR010
American elm	<i>Ulmus americana</i>	ULAM
American plum	<i>Prunus americana</i>	PRAM
antelope bitterbrush	<i>Purshia tridentata</i>	PUTR2
arroyo willow	<i>Salix lasiolepis</i>	SALA6
balsamoroot	<i>Balsamorhiza</i> spp.	BALSA
Baltic rush	<i>Juncus balticus</i>	JUBA
basin big sagebrush	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	ARTRT
basin wildrye	<i>Leymus cinereus</i>	LECI4
beardless wildrye	<i>Leymus triticoides</i>	LETR5
big bluegrass	<i>Poa secunda</i>	POSE
big sagebrush	<i>Artemisia tridentata</i>	ARTR2
big squirreltail	big squirreltail	SIJU
bitter cherry	<i>Prunus emarginata</i>	PREM
black greasewood	<i>Sarcobatus vermiculatus</i>	SAVE4
black locust	<i>Robinia pseudoacacia</i>	ROPS
blue spruce	<i>Picea pungens</i>	PIPU
bluegrass	<i>Poa glauca</i>	POGL
bluegrass	<i>Poa</i> spp.	POA
bottlebrush squirreltail	<i>Elymus elymoides</i>	ELEL5
broom snakeweed	<i>Gutierrezia sarothrae</i>	GUSA2
California red fir	<i>Abies magnifica</i>	ABMA
Carex	<i>Carex</i> spp.	CAREX
catchfly	<i>Silene</i>	SILEN
Ceanothus	<i>ceanothus</i>	CEANO
clover	<i>Trifolium</i>	TRIFO
Columbia needlegrass	<i>Achnatherum nelsonii</i> ssp. <i>nelsonii</i>	ACNEN2
comb draba	<i>Draba oligosperma</i> var. <i>oligosperma</i>	DROL
common chokecherry	<i>Prunus virginiana</i>	PRVI
common hackberry	<i>Celtis occidentalis</i>	CEOC
common juniper	<i>Juniperus communis</i>	JUCO6
common lilac	<i>Syringa vulgaris</i>	SYVU
cotoneaster	<i>Cotoneaster</i> spp.	COTON
cottonwood	<i>Populus</i> spp.	POPUL
creeping bentgrass	<i>Agrostis stolonifera</i>	AGST2
creeping wildrye	<i>Leymus triticoides</i>	LETR5
curlleaf mountainmahogany	<i>Cercocarpus ledifolius</i>	CELE3
currant	<i>Ribes</i>	RIBES
cushion phlox	<i>Phlox condensata</i>	PHCO11
desert bitterbrush	<i>Purshia glandulosa</i>	PUGL2
desert needlegrass	<i>Achnatherum speciosum</i>	ACSP12
desert peach	<i>Prunus andersonii</i>	PRAN2
desertbroom	<i>Baccharis sarothroides</i>	BASA2
Douglas rabbitbrush	<i>Chrysothamnus viscidiflorus</i>	CHVI8
Douglas' sedge	<i>Carex douglasii</i>	CADO2
dwarf alpine Indian paintbrush	<i>Castilleja nana</i>	CANA3
ephedra	<i>Ephedra</i>	EPHED
eriogonum	<i>Eriogonum</i>	ERIOG
flowering crabapple	<i>Malus floribunda</i>	MAFL80
forsythia	<i>Forsythia</i> spp.	FORSY
fourwing saltbush	<i>Atriplex canescens</i>	ATCA2
Fremont's cottonwood	<i>Populus fremontii</i>	POFR2
golden currant	<i>Ribes aureum</i>	RIAU
golden willow	<i>Salix alba</i> var. <i>vitellina</i>	SAALV
goldenweed	<i>pyrrocoma</i> spp.	PYRRO
green ash	<i>Fraxinus pennsylvanica</i>	FRPE
green ephedra	<i>Ephedra viridis</i>	EPVI
greenleaf manzanita	<i>Arctostaphylos patula</i>	ARPA6
groundsel	<i>Senecio</i>	SENEC
honeylocust	<i>Gleditsia triacanthos</i>	GLTR
honeysuckle	<i>Lonicera</i>	LONIC
Indian ricegrass	<i>Achnatherum hymenoides</i>	ACHY
inland saltgrass	<i>Distichlis spicata</i>	DISP
Jeffrey pine	<i>Pinus jeffreyi</i>	PIJE
Kentucky bluegrass	<i>Poa pratensis</i>	POPR
Lake Tahoe draba	<i>Draba asterophora</i> var. <i>asterophora</i>	DRASA2
Letterman needlegrass	<i>Achnatherum lettermanii</i>	ACLE9
limber pine	<i>Pinus flexilis</i>	PIFL2
littleleaf horsebrush	<i>Tetradymia glabrata</i>	TEGL
locoweed	<i>Astragalus</i>	ASTRA
lodgepole pine	<i>Pinus contorta</i>	PICO
Lombardy poplar	<i>Populus nigra</i> var. <i>italica</i>	PONII
longleaf hawksbeard	<i>Crepis acuminata</i>	CRAC2
low sagebrush	<i>Artemisia arbuscula</i>	ARAR8
lupine	<i>Lupinus</i> spp.	LUPIN

Appendix - Index of Plant Common and Scientific Names and Plant Symbols

Local Common Name	Scientific Name	Plant Symbol
marumleaf buckwheat	<i>Eriogonum marifolium</i>	ERMA4
mat muhly	<i>Muhlenbergia richardsonis</i>	MURI
meadow barley	<i>Hordeum brachyantherum</i>	HOBR2
melic	<i>Melica</i>	MELIC
Mexican cliffrose	<i>Purshia mexicana</i>	PUME
mountain big sagebrush	<i>Artemisia tridentata</i> ssp. <i>vaseyana</i>	ARTRV
mountain brome	<i>Bromus marginatus</i>	BRMA4
mountain hemlock	<i>Tsuga mertensiana</i>	TSME
mountain monardella	<i>Monardella odoratissima</i>	MOOD
mountain silver sagebrush	<i>Artemisia cana</i> ssp. <i>viscidula</i>	ARCAV2
Mt. Hood pussypaws	<i>Cistanthe umbellata</i> var. <i>umbellata</i>	CIUMU
mulesears wyethia	<i>Wyethia amplexicaulis</i>	WYAM
muttongrass	<i>Poa fendleriana</i>	POFE
narrowleaf cottonwood	<i>Populus angustifolia</i>	POAN3
Nebraska sedge	<i>Carex nebrascensis</i>	CANE2
needleandthread	<i>Hesperostipa comata</i>	HECO26
needleandthread	<i>Hesperostipa comata</i> ssp. <i>comata</i>	HECOC8
needlegrass	<i>Achnatherum</i>	ACHNA
Nevada bluegrass	<i>Poa secunda</i>	PONE3
oneseed juniper	<i>Juniperus monosperma</i>	JUMO
other perennial forbs	unknown	PPFF
other perennial grasses	unknown	PPGG
other shrubs	unknown	SSSS
other trees	unknown	TTTT
Parish's onion	<i>Allium parishii</i>	ALPA2
Parry's rabbitbrush	<i>Ericameria parryi</i>	ERPA30
Peking cotoneaster	<i>Cotoneaster acuminata</i>	COAC2
penstemon	<i>Penstemon</i>	PENST
phlox	<i>Phlox</i>	PHLOX
pine needlegrass	<i>Achnatherum pinetorum</i>	ACPI2
pinemat manzanita	<i>Arctostaphylos nevadensis</i>	ARNE
pioneer rockcress	<i>Arabis platysperma</i>	ARPL
ponderosa pine	<i>Pinus ponderosa</i>	PIPO
prairie junegrass	<i>Koeleria cristata</i>	KOCR
prairie Junegrass	<i>Koeleria macrantha</i>	KOMA
purple sage	<i>Salvia dorrii</i> ssp. <i>dorrii</i> var. <i>incana</i>	SADOI
pyracantha	<i>Pyracantha</i> spp.	PYRAC
quaking aspen	<i>Populus tremuloides</i>	POTR5
redosier dogwood	<i>Cornus sericea</i> ssp. <i>sericea</i>	COSES
robusta cottonwood	<i>Populus X robusta</i>	PORO11
rockcress	<i>Arabis</i> spp.	ARAB12
Rocky Mountain juniper	<i>Juniperus scopulorum</i>	JUSC2
Ross' sedge	<i>Carex rossii</i>	CARO5
rosy buckwheat	<i>Eriogonum roseense</i>	ERRO
roundleaf snowberry	<i>Symphoricarpos rotundifolius</i>	SYRO
rubber rabbitbrush	<i>Ericameria nauseosa</i>	ERNA10
rubber rabbitbrush	<i>Ericameria nauseosa</i> ssp. <i>nauseosa</i> var. <i>nauseosa</i>	ERNAN5
rush	<i>Juncus</i> spp.	JUNCU
Russian olive	<i>Elaeagnus angustifolia</i>	ELAN
sandbar willow	<i>Salix exigua</i>	SAEX
Sandberg bluegrass	<i>Poa secunda</i>	POSE
Scotch pine	<i>Pinus sylvestris</i>	PISY
sedge	<i>Carex</i> spp.	CAREX
Shasta knotweed	<i>Polygonum shastense</i>	POSH
Siberian crabapple	<i>Malus baccata</i>	MABA
Siberian elm	<i>Ulmus pumila</i>	ULPU
Siberian peashrub	<i>Caragana arborescens</i>	CAAR18
Sierra chinkapin	<i>Chrysolepis sempervirens</i>	CHSE11
Sierra podistera	<i>Podistera nevadensis</i>	PONE4
Sierran currant	<i>Ribes nevadense</i>	RINE
Sierran gooseberry	<i>Ribes roezlii</i>	RIRO
silver buffaloberry	<i>Shepherdia argentea</i>	SHAR
silver sagebrush	<i>Artemisia cana</i>	ARCA13
singlehead goldenbush	<i>Ericameria suffruticosa</i>	ERSU13
singleleaf pinyon	<i>Pinus monophylla</i>	PIMO
skunkbush sumac	<i>Rhus trilobata</i>	RHTR
slender buckwheat	<i>Eriogonum microthecum</i>	ERMI4
slender wheatgrass	<i>Elymus trachycaulus</i> ssp. <i>trachycaulus</i>	ELTRT
snowberry	<i>Symphoricarpos</i> spp.	SYMPH
snowbrush ceanothus	<i>Ceanothus velutinus</i>	CEVE
spike fescue	<i>Festuca kingii</i>	FEKI2
spiny hopsage	<i>Grayia spinosa</i>	GRSP
spreading phlox	<i>Phlox diffusa</i>	PHDI3
squirreltail	<i>Elymus elymoides</i> ssp. <i>californicus</i>	ELELC2
sulfur flower buckwheat	<i>Eriogonum umbellatum</i>	ERUM
Tatarian honeysuckle	<i>Lonicera tatarica</i>	LOTA

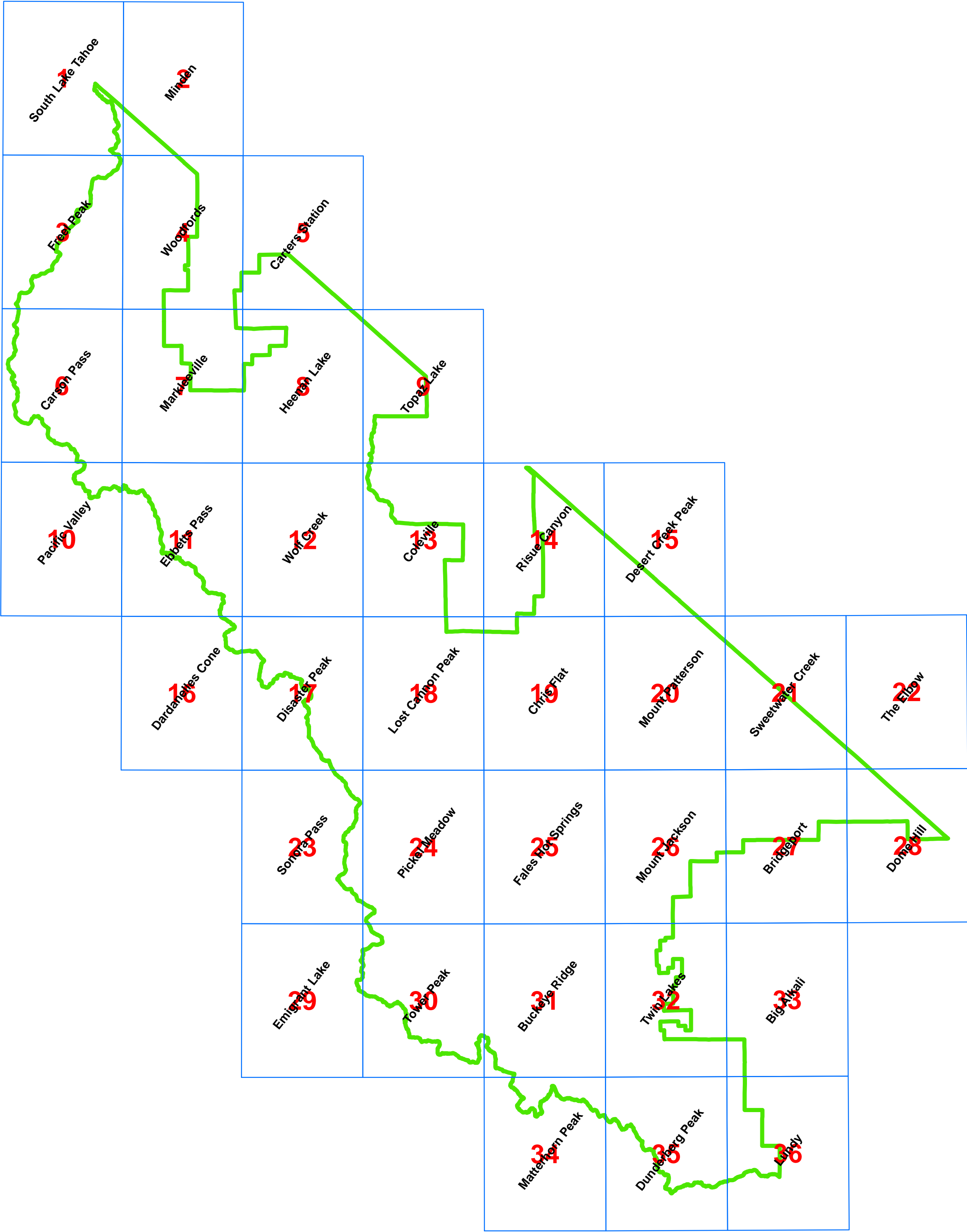
Appendix - Index of Plant Common and Scientific Names and Plant Symbols

Local Common Name	Scientific Name	Plant Symbol
threadleaf sedge	Carex filifolia	CAFI
Thurber's needlegrass	Achnatherum thurberianum	ACTH7
Torrey's saltbush	Atriplex torreyi	ATTO
tufted hairgrass	Deschampsia cespitosa	DECE
Utah juniper	Juniperus osteosperma	JUOS
Utah serviceberry	Amelanchier utahensis	AMUT
western juniper	Juniperus occidentalis	JUOC
western needlegrass	Achnatherum occidentale ssp. occidentale	ACOCO
western wheatgrass	Pascopyrum smithii	PASM
western white pine	Pinus monticola	PIMO3
white fir	Abies concolor	ABCO
white mulberry	Morus alba	MOAL
white poplar	Populus alba	POAL7
whitebark pine	Pinus albicaulis	PIAL
whitestem goldenbush	Ericameria discoidea	ERDI14
wild mint	Mentha arvensis	MEAR4
willow	Salix spp.	SALIX
Woods' rose	Rosa woodsii	ROWO
Wyoming big sagebrush	Artemisia tridentata ssp. wyomingensis	ARTRW8
yellow willow	Salix lutea	SALU2

This table aids in correct plant identification and serves as a cross-reference to plant species listed in Table 6. The plant synonymy as reported in the USDA-NRCS National Plants Database at the time of publication is used.

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SOIL LEGEND

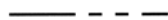
SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
100-Lithnip-Hawkinspeak-Rock outcrop complex, 30 to 75 percent slopes		260-HawkrIDGE-Hawkinspeak association		592-Loope-Pinew-Heenlake association	
101-Lithnip-Rock outcrop-Fishsnooze complex, 30 to 75 percent slopes		261-HawkrIDGE-Lithnip-Hawkinspeak association		600-Snowtell-Sonorapass-Rock outcrop complex, 8 to 30 percent slopes	
102-Lithnip-Rock outcrop-Fishsnooze complex, 8 to 30 percent slopes		262-Domehill-Klote association		610-Forsell-Snowtell-Rock outcrop complex, 8 to 30 percent slopes	
103-Lithnip-Meiss-Hawkinspeak association		270-Duco-Smallcone-Cagle association		611-Forsell-Snowtell-Rock outcrop complex, 30 to 50 percent slopes	
110-Jobsis-Whittell-Rock outcrop complex, 8 to 30 percent slopes		271-Duco-Vetagrande-Pinenut association		620-Indian Creek very gravelly sandy loam, 2 to 8 percent slopes	
111-Whittell-Jobsis-Rock outcrop complex, 30 to 75 percent slopes		280-Longcreek-Devada association		630-Olac-Flex-Duco association	
112-Jobsis-Whittell-Rock outcrop complex, cool, 8 to 30 percent slopes		290-Pernty-Chen association		640-Koontz-Nosrac association	
113-Whittell-Jobsis-Rock outcrop complex, cool, 30 to 75 percent slopes		310-Bagval-Wetbag complex, 0 to 8 percent slopes		650-Shree very gravelly sandy loam, 4 to 15 percent slopes	
120-Toiyabe-Corbett-Rock outcrop complex, 30 to 50 percent slopes		320-Frontown-Rock outcrop complex, 50 to 75 percent slopes		651-Shree-Holbrook association	
121-Toiyabe-Corbett-Rock outcrop complex, 8 to 30 percent slopes		330-Oest very bouldery sandy loam, 2 to 8 percent slopes		660-Delhew-Grandridge-Bakscratcher association	
122-Toiyabe-Corbett-Rock outcrop complex, 50 to 75 percent slopes		340-Aspocket association		670-Springmeyer gravelly sandy loam, 4 to 8 percent slopes	
130-Sofgran-Klauspeak-Temo association		350-Leroman-Chenhigh-Celeridge association		671-Springmeyer-Cassiro association	
131-Sofgran-Temo-Shalgran association		360-Monibasin-Vermidig association		680-Rolldown-Mountpatterson-Rubble land complex, 4 to 30 percent slopes	
132-Sofgran-Temo-Rock outcrop association		370-Celeridge-Gerdog-Loope association		700-Coldtree-Rubble land complex, 30 to 75 percent slopes	
140-Temo-Dagget-Rock outcrop complex, 30 to 75 percent slopes		380-Joecut-Celeridge-Gerdog association		710-Bakscratcher-Grandridge-McTom association	
150-Mottakal very bouldery loamy coarse sand, 2 to 15 percent slopes		381-Joecut-Heenlake association		720-Nohelp-Joenchris association	
160-Hopeval complex, 2 to 8 percent slopes		382-Joecut association		730-Burchflat-Loope association	
162-Hopeval-Corralval complex, 0 to 4 percent slopes		390-Heenlake-Loope-Chenhigh association		731-Burchflat-Celeridge-Loope association	
170-Burnlake-Roadcat association		391-Heenlake-Loope-Dogbed association		740-Jackflat-Grandridge association	
171-Stumpatil-Morscour association		392-Heenlake-Loope association		760-Thief ridge-Rock outcrop complex, 30 to 75 percent slopes	
172-Stumpatil very gravelly sandy loam, 30 to 50 percent slopes		400-Pinew-Carshal-Loope association		770-Sweetmount-Hawkinspeak-HawkrIDGE association	
173-Stumpatil very gravelly sandy loam, 8 to 30 percent slopes		401-Pinew-Rock outcrop association		780-Granhogany-Rock outcrop complex, 15 to 50 percent slopes	
174-Stumpatil-Sonorapass-Snowtell association		410-Wolfcut very stony loam, 8 to 30 percent slopes		790-Dab association	
180-Shalgran-Rock outcrop complex, 30 to 75 percent slopes		420-Buggin-Rock outcrop complex, 30 to 75 percent slopes		791-Dab-Longday-Thief ridge association	
190-Hopeval complex, 0 to 2 percent slopes		430-Newcone-Rock outcrop complex, 30 to 75 percent slopes		792-Dab-Aspocket-HawkrIDGE association	
200-Cavebear-Hopeval complex, 2 to 8 percent slopes		440-Dogbed-Celeridge-Carshal association		800-Grandridge-Delhew association	
210-Waterpeak-Rock outcrop complex, 30 to 75 percent slopes		450-Carshal-Loope-Rock outcrop complex, 15 to 75 percent slopes		801-Grandridge-Delhew-Bullville association	
211-Waterpeak-Buggin-Rock outcrop association		460-Toejom-Pimogran-Rock outcrop association		810-Corbett-Toiyabe-Rock outcrop complex, 15 to 50 percent slopes	
212-Waterpeak-Sofgran-Temo association		461-Toejom-Pimogran-Rock outcrop association, 50 to 75 percent slopes		820-Freelpeak-Windyridge-Rock outcrop complex, 15 to 75 percent slopes	
220-Hardtil-Alpineco-Rock outcrop complex, 8 to 30 percent slopes		462-Toejom-Glenbrook-Pimogran association		830-Windyridge-Freelpeak-Rock outcrop complex, 8 to 30 percent slopes	
221-Hardtil-Alpineco-Rock outcrop complex, 30 to 75 percent slopes		470-Sumeadow-Lostridge association		840-Lavaspring-Trespas complex, 0 to 4 percent slopes	
222-Hardtil-Alpineco-Rock outcrop complex, warm, 8 to 30 percent slopes		471-Sumeadow association		850-Lunder very gravelly sandy loam, 2 to 8 percent slopes	
230-Hawkinspeak-Thief ridge-Angelwhine association		480-Aspetill association		851-Lunder-Leviathan association	
231-Hawkinspeak association		481-Aspetill association, very stony		860-Hardnut-Ocashe association	
232-Hawkinspeak-HawkrIDGE association		490-Cloudburst-Murain association		870-Epvip-Domehill-Ashflat association	
233-Hawkinspeak-Angelwhine-HawkrIDGE association		491-Cloudburst-Murain-Hardtil association		871-Halfash-Domehill association	
234-Hawkinspeak-Thief ridge association		500-Chrisflat very gravelly coarse sandy loam, 4 to 15 percent slopes		872-Epvip-Vetash association	
235-Hawkinspeak-Angelwhine association		510-Rubble land-Lithnip-Rock outcrop association		873-Epvip-Hardnut-Vetash association	
240-Granylich-Hargran-Rock outcrop complex, 8 to 30 percent slopes		511-Rock outcrop-Snowtell-Forsell complex, 8 to 30 percent slopes		880-Mopana very gravelly ashy fine sandy loam, 0 to 8 percent slopes	
250-Florand-Lostridge-Fishsnooze association		512-Rock outcrop-Snowtell complex, 30 to 75 percent slopes		890-Masonic-Epvip-Domehill association	
		513-Rubble land-Holdon-Rock outcrop complex, 30 to 100 percent slopes		900-Brokenhoe-Fisheridge association	
		520-Canfire-Crispy-Rock outcrop association		910-Indian Creek-Haybourne association	
		530-Elaero-Lockgate-Granhogany association		920-Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes	
		531-Elaero association		930-Lavaspring complex, 0 to 4 percent slopes	
		532-Elaero-Granidry-Rock outcrop association		960-Rose Creek loam, 0 to 2 percent slopes	
		540-Lostcannon association		998-Dumps-Pits complex	
		560-Dunderberg-Conwayridge association		999-Water	
		561-Dunderberg association			
		570-Angelwhine-Hawkinspeak-HawkrIDGE association			
		580-Murain-Shorthike association			
		581-Murain association			
		590-Loope-Heenlake-Carshal association			
		591-Loope-Heenlake-Celeridge association			

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

National, state or province



County or parish

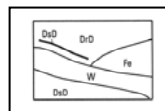


Reservation (national or state
forest or park)



SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND
LABELS



Perennial water



ROAD EMBLEMS & DESIGNATIONS

Federal



State



119° 57' 30"

119° 55' 00"

R. 18 E. R. 19 E.

39° 00' 00"

39° 00' 00"

38° 57' 30"

38° 57' 30"

T. 13 N.
T. 12 N.

T. 13 N.
T. 12 N.

38° 55' 00"

38° 55' 00"

38° 52' 30"

38° 52' 30"

120° 00' 00"

119° 57' 30"

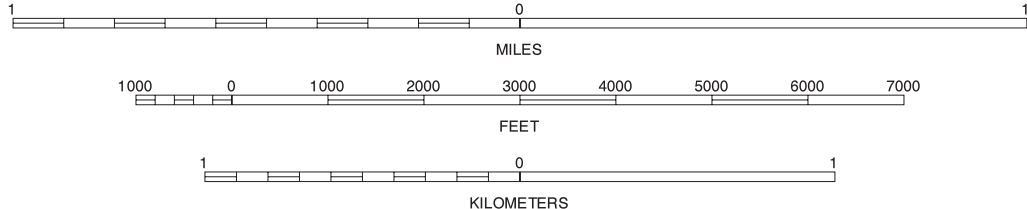
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R. 18 E. R. 19 E.

119° 52' 30"

Joins sheet 3, Freel Peak

SCALE 1:24000



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH



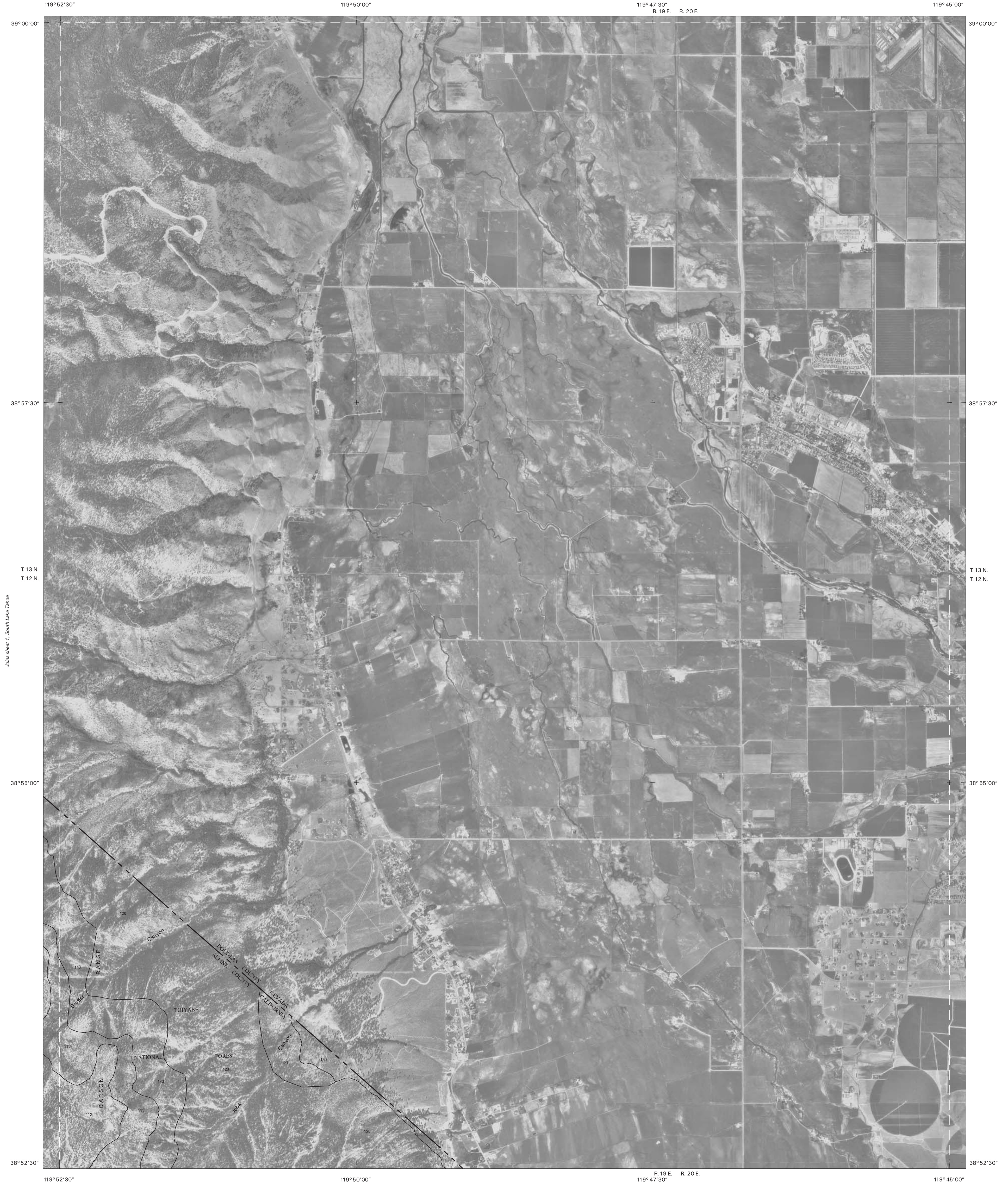
QUADRANGLE LOCATION

SOUTH LAKE TAHOE, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 1 OF 36

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 2, Minden

Joins sheet 4, Woodruff



Joins sheet 1, South Lake Tahoe

Joins sheet 3, Fresno Peak

Joins sheet 5, Clara Station

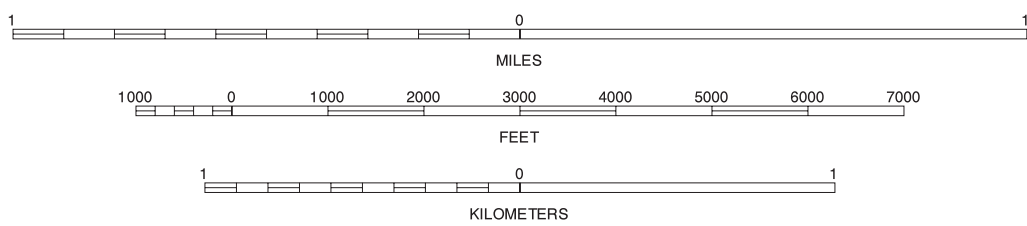
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH



QUADRANGLE LOCATION



MINDEN, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 2 OF 36

Soil map delineations extending beyond the dashed white quadrangle neartline are for reference only and are included on adjacent map sheets.

119° 57' 30"

Joins sheet 1, South Lake Tahoe

119° 55' 00"

R. 18 E. R. 19 E.

T. 12 N.
T. 11 N.

38° 52' 30"

Joins sheet 4, Woodlands

38° 47' 30"

T. 11 N.
T. 10 N.

38° 45' 00"

Joins sheet 2,
Hartsville

38° 52' 30"

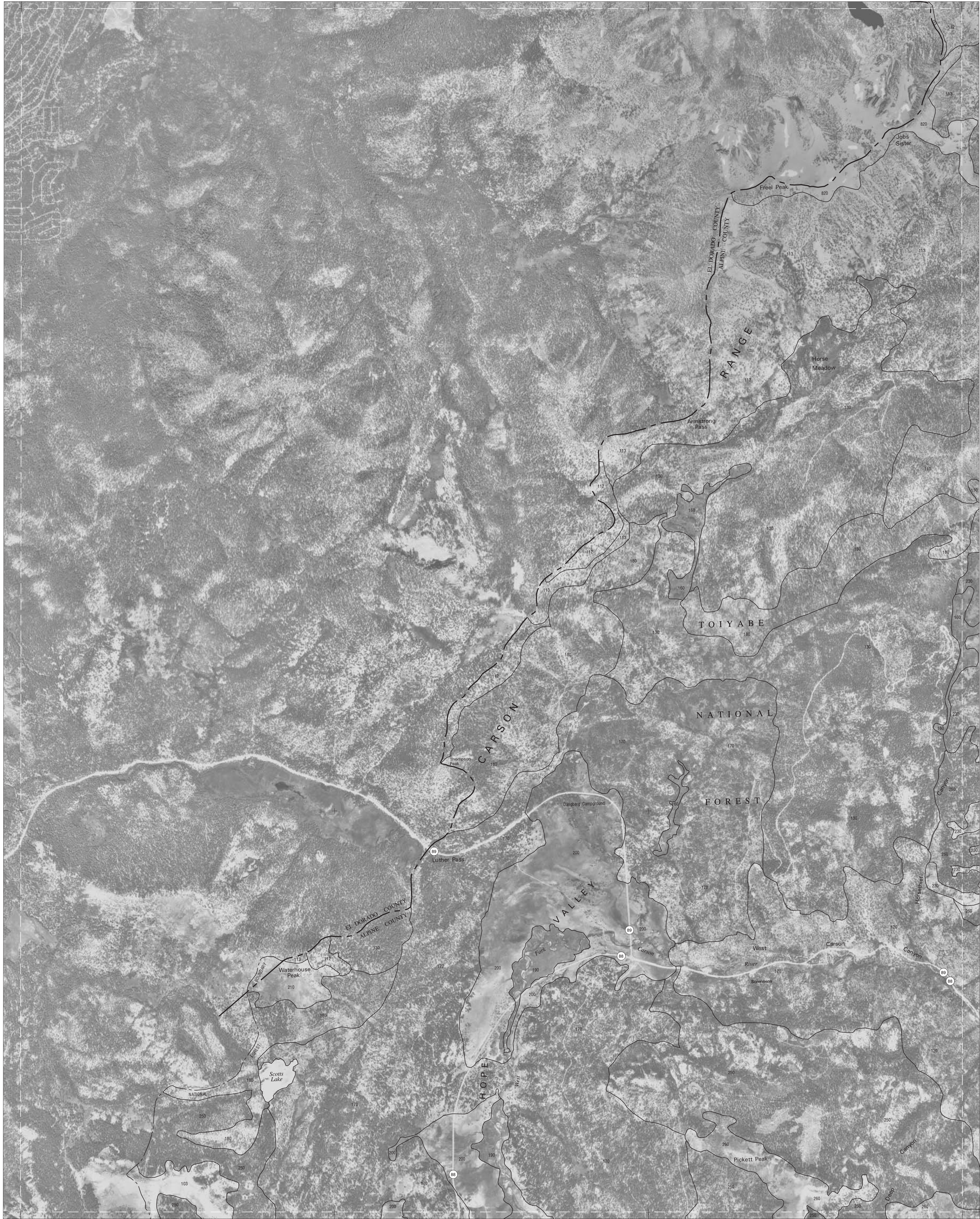
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T. 11 N.
T. 10 N.

38° 45' 00"



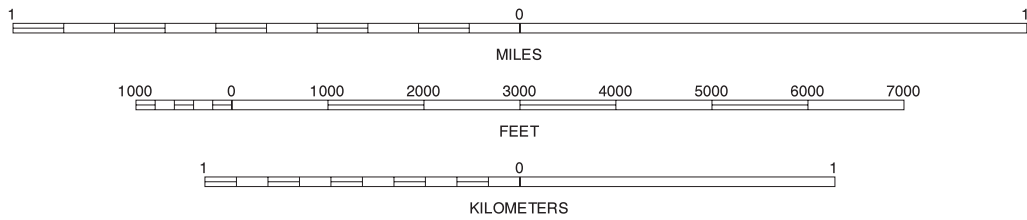
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 11.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH



QUADRANGLE LOCATION



SCALE 1:24000

R. 18 E. R. 19 E.

Joins sheet 6, Carson Pass

FREEL PEAK, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 3 OF 36

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Soil sheet 1, Reese
South Lake Tahoe

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
119° 52' 30"

119° 50' 00"

Joins sheet 2, Minden

119° 47' 30"
R. 19 E. R. 20 E.

TOIYABE NATIONAL FOREST AREA, CALIFORNIA
WOODFORDS QUADRANGLE
SHEET NUMBER 4 OF 36
119° 45' 00"

38° 52' 30"

T. 12 N.
T. 11 N.

38° 50' 00"

38° 47' 30"

T. 11 N.
T. 10 N.

38° 45' 00"

38° 52' 30"

T. 12 N.
T. 11 N.

38° 50' 00"

38° 47' 30"

T. 11 N.
T. 10 N.

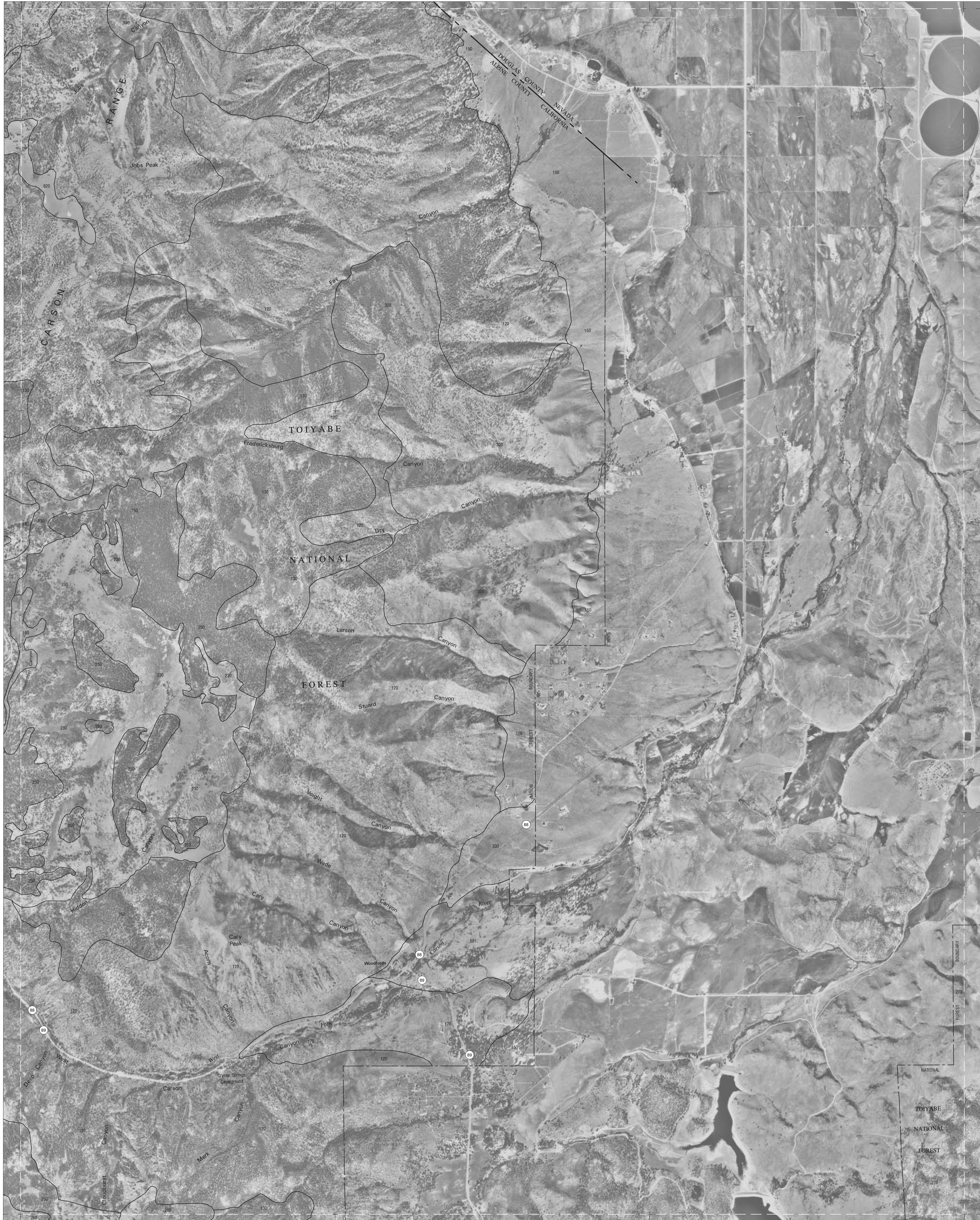
38° 45' 00"

Joins sheet 3, Fred Peak

Joins sheet 5, Carvers Station

Joins sheet 6,
Carson Pass

Joins sheet 8,
Heaven Lake



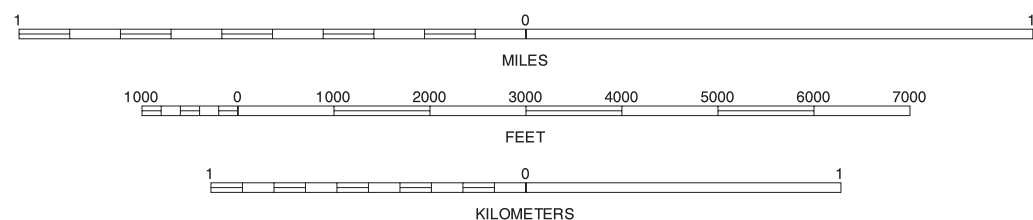
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH



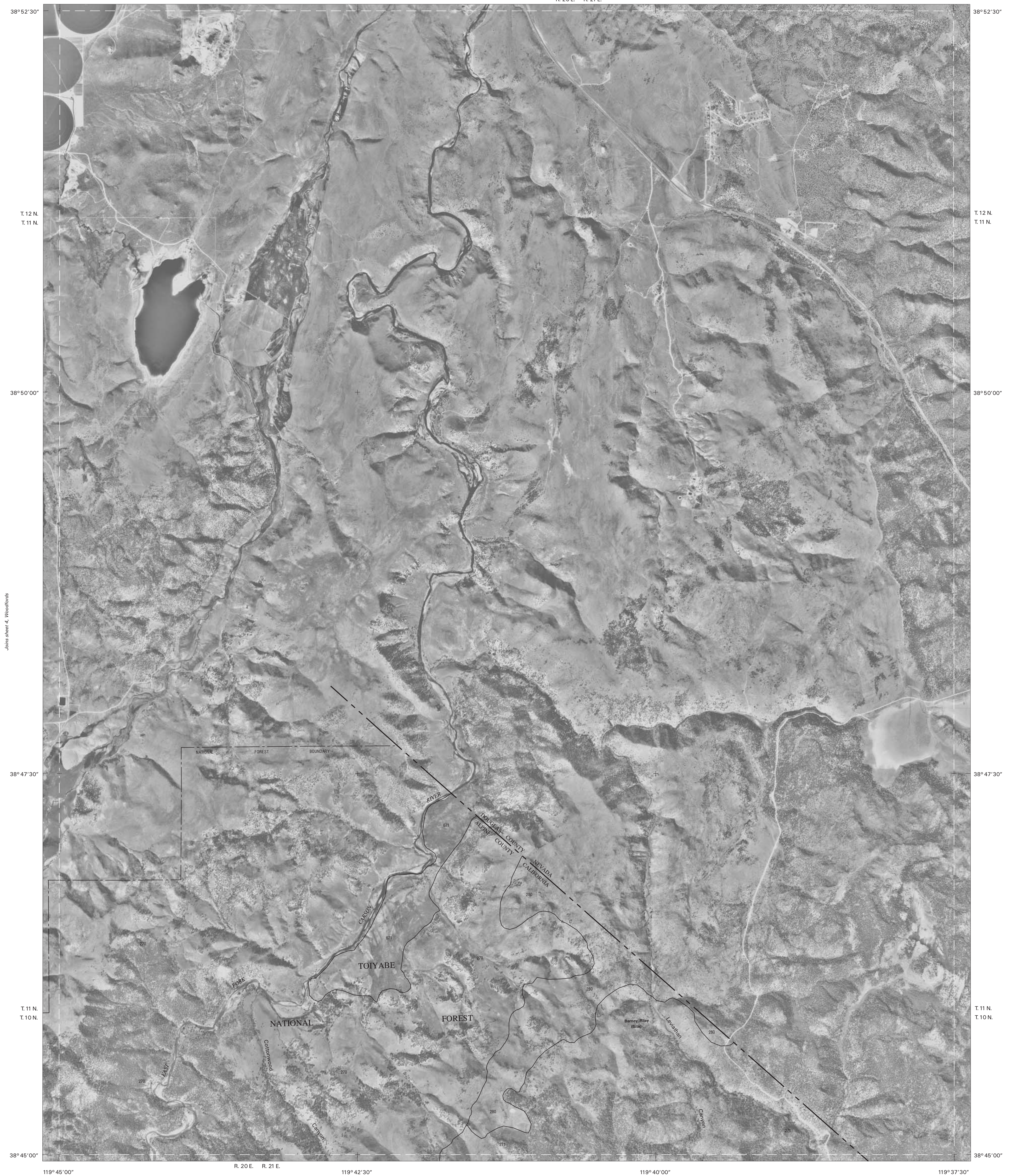
QUADRANGLE LOCATION



Joins sheet 7, Markleville

WOODFORDS, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 4 OF 36

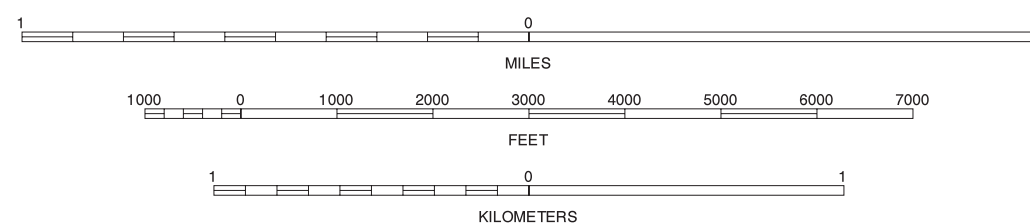
Soil map delineations extending beyond the dashed white quadrangle neartline are for reference only and are included on adjacent map sheets.



North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 11.
Coordinate grid ticks and land division data, if shown, are
approximately positioned. Digital data is available for
this quadrangle.



QUADRANGLE LOCATION



Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



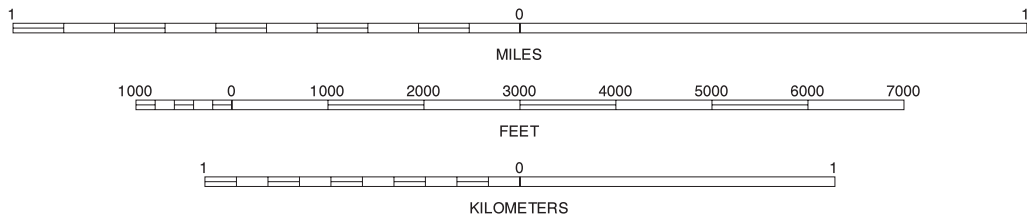
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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH



QUADRANGLE LOCATION



CARSON PASS, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 6 OF 36

Soil map delineations extending beyond the dashed white quadrangle nealline are for reference only and are included on adjacent map sheets.

Joins sheet 4, Woodfords

Joins sheet 5,
Cenere Station

38° 45' 00"

38° 45' 00"

38° 42' 30"

38° 42' 30"

38° 40' 00"

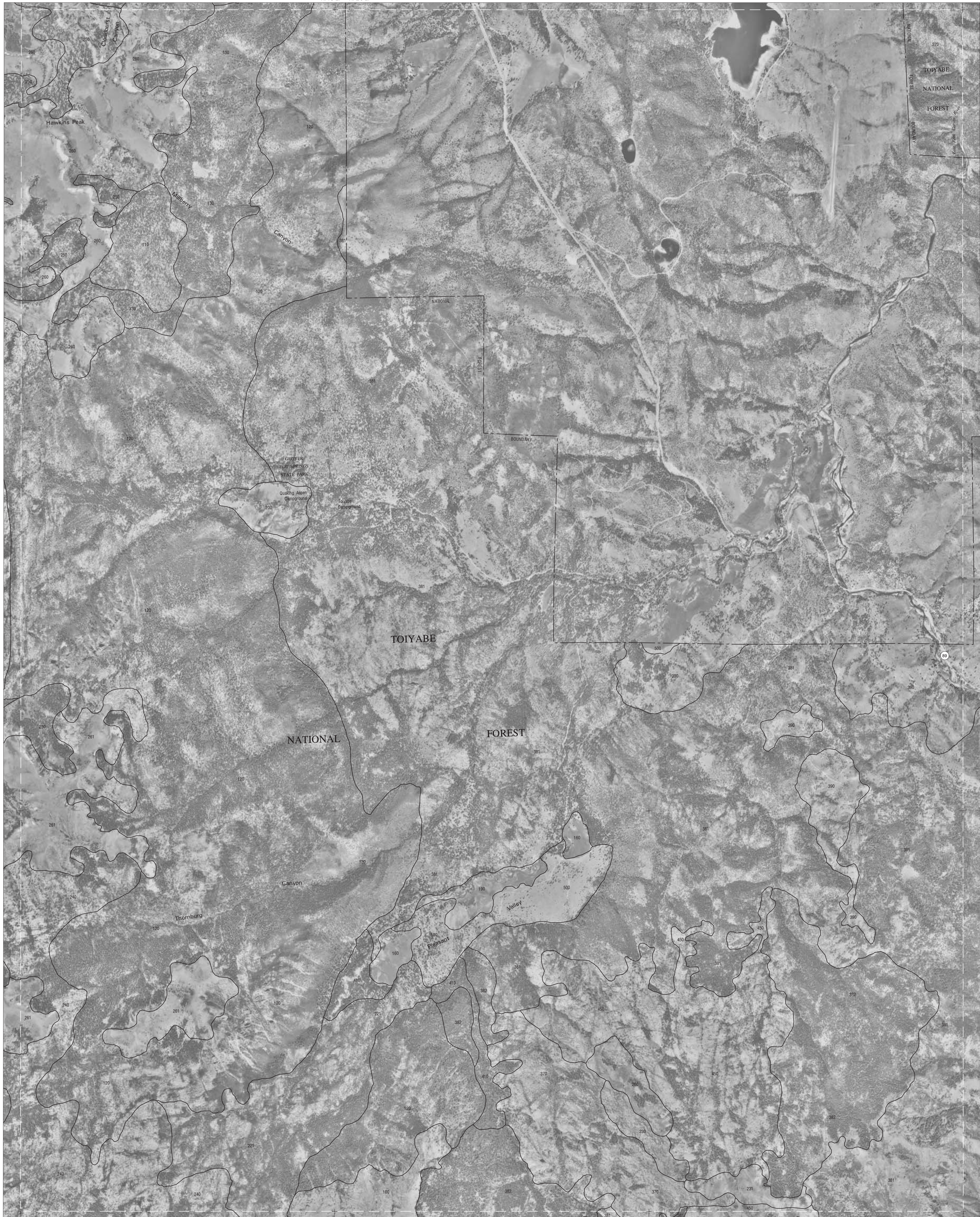
38° 40' 00"

T. 10 N.
T. 9 N.

T. 10 N.
T. 9 N.

38° 37' 30"

38° 37' 30"



Joins sheet 10,
Pacific Valley

Joins sheet 12,
Wolf Creek

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH

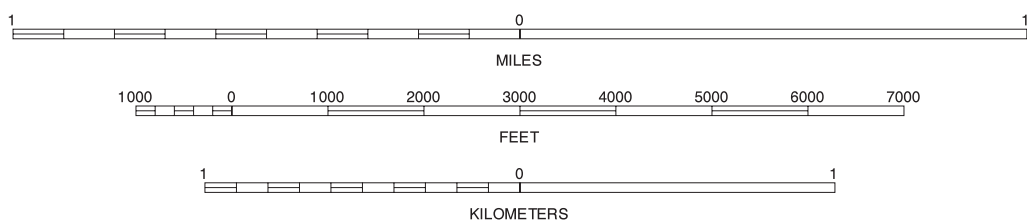


QUADRANGLE LOCATION

R. 19 E. R. 20 E.
119° 52' 30" 119° 50' 00"

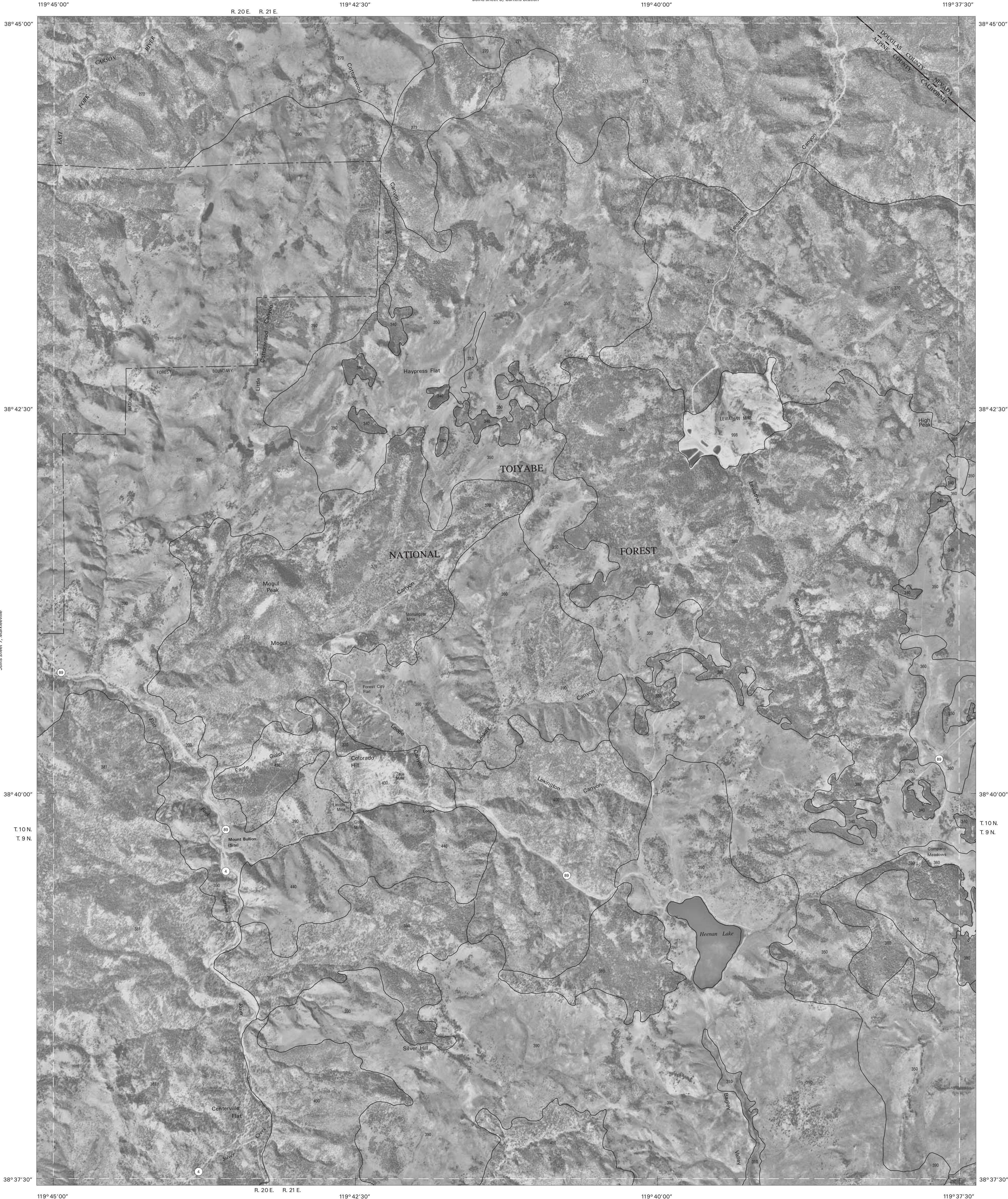
Joins sheet 11, Ebbetts Pass

SCALE 1:24000



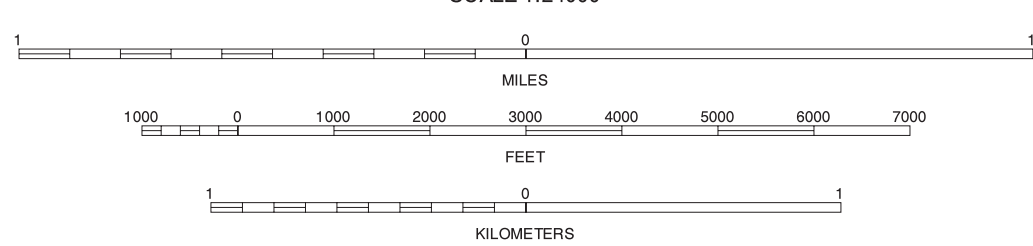
MARKLEEVILLE, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 7 OF 36

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.



HEENAN LAKE, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 8 OF 36

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 5
Carrizo Station

119° 35' 00"

R. 21 E. R. 22 E.

119° 32' 30"

38° 45' 00"

38° 42' 30"

38° 40' 00"

T. 10 N.
T. 9 N.

38° 37' 30"

38° 45' 00"

38° 42' 30"

T. 10 N.
T. 9 N.

38° 40' 00"

38° 37' 30"

Joins sheet 8, Heenan Lake

Joins sheet 12,
Wolf Creek

Joins sheet 14,
Horse Canyon



R. 21 E. R. 22 E.

119° 35' 00"

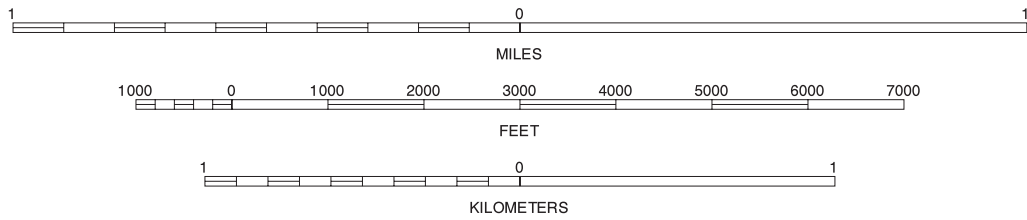
119° 32' 30"

R. 22 E. R. 23 E.

119° 30' 00"

Joins sheet 13, Coleville

SCALE 1:24000



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH



QUADRANGLE LOCATION

TOPAZ LAKE, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 9 OF 36

Soil map delineations extending beyond the dashed white quadrangle neartline are for reference only and are included on adjacent map sheets.

Joins sheet 6, Carson Pass

R. 18 E. R. 19 E.

119° 55' 00"

38° 37' 30"

38° 37' 30"

38° 35' 00"

38° 35' 00"

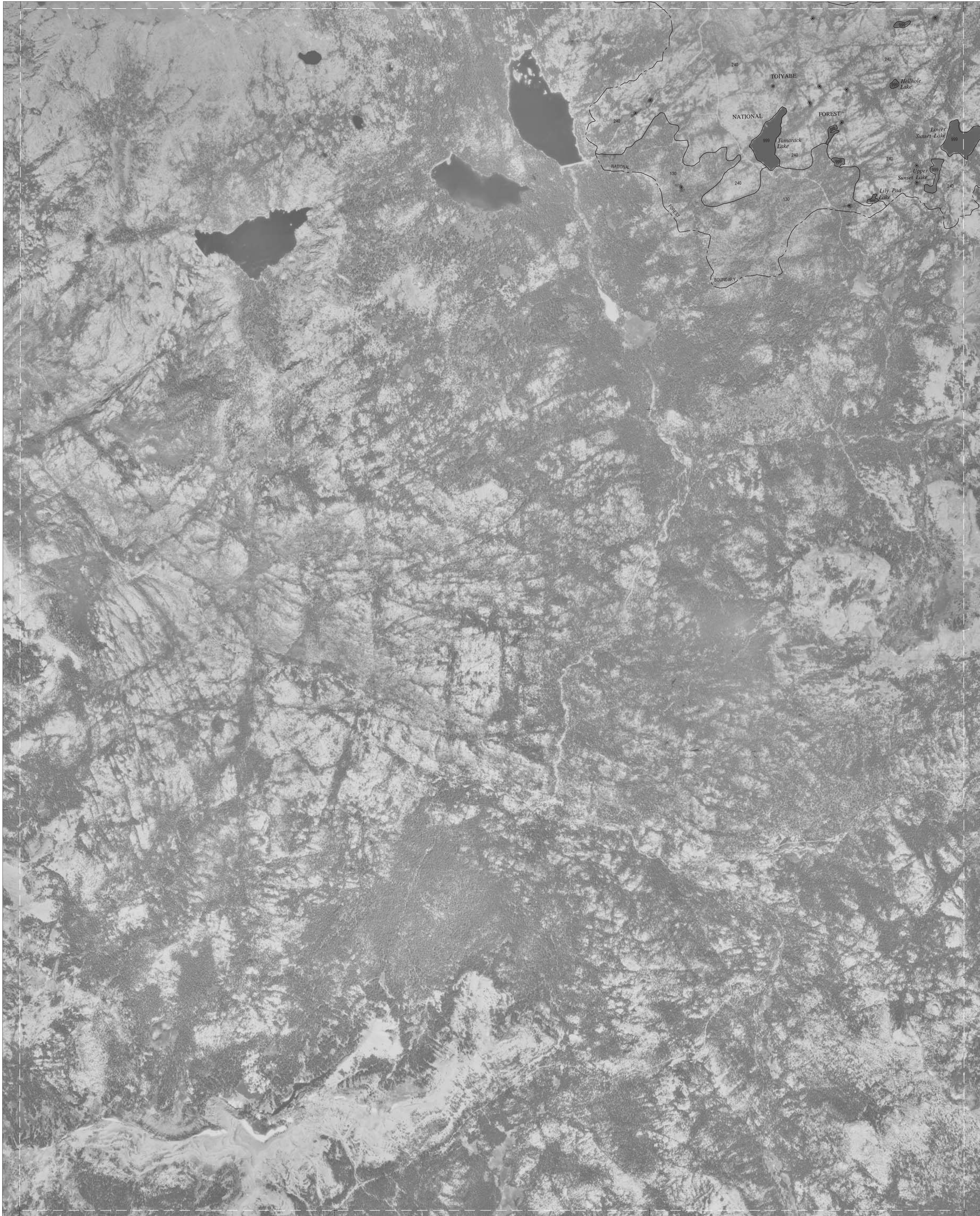
T. 9 N.
T. 8 N.

38° 32' 30"

38° 32' 30"

38° 30' 00"

38° 30' 00"



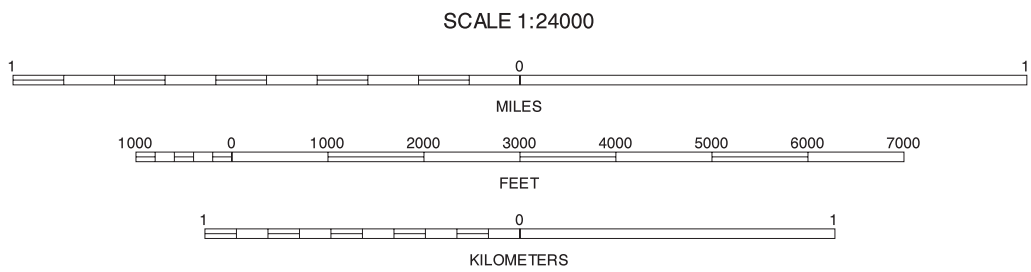
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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH



QUADRANGLE LOCATION

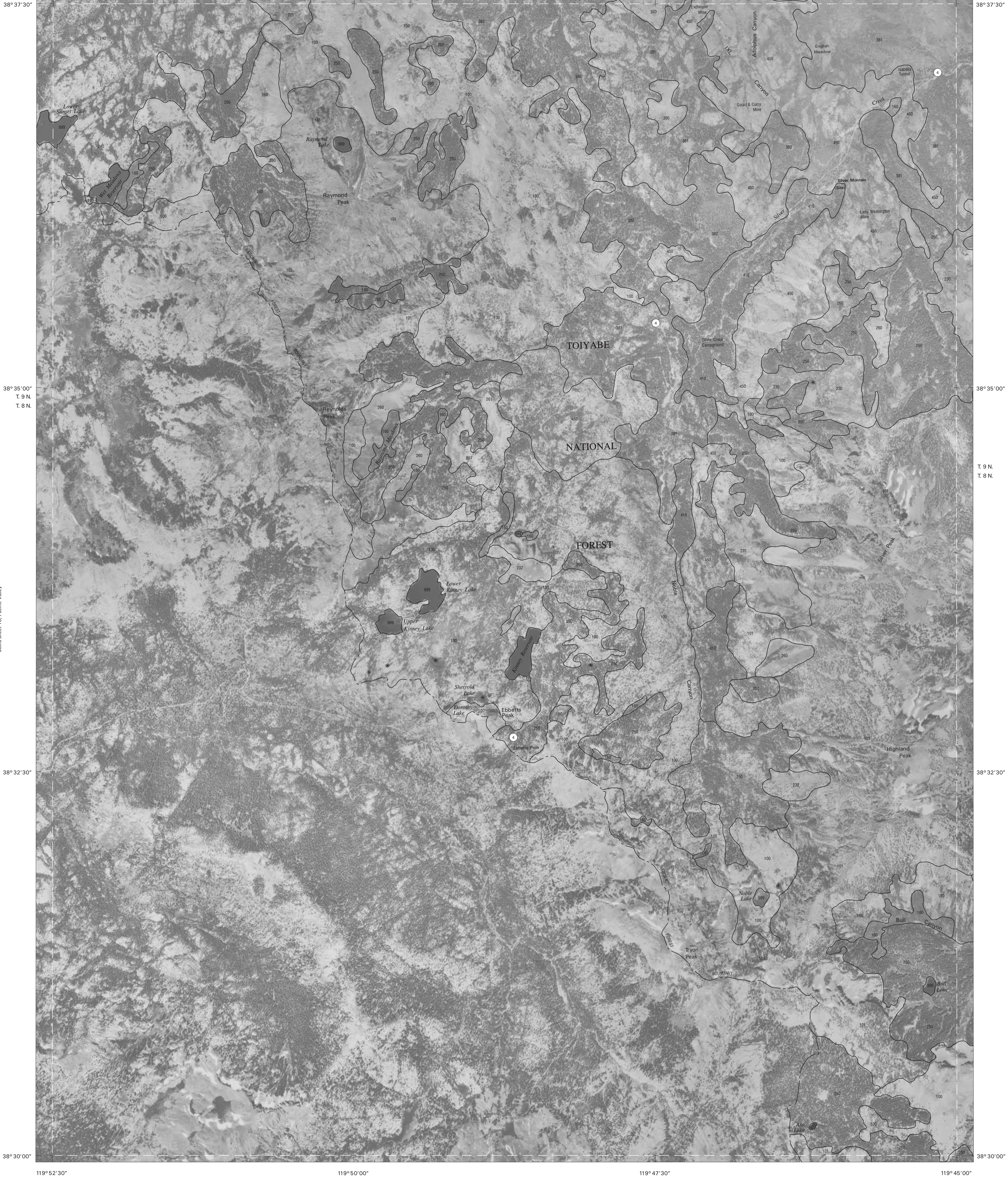


PACIFIC VALLEY, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 10 OF 36

Soil map delineations extending beyond the dashed white quadrangle nealline are for reference only and are included on adjacent map sheets.

Joins sheet 16
Davidsonville Core

Joins sheet 11, Eberetts Pass



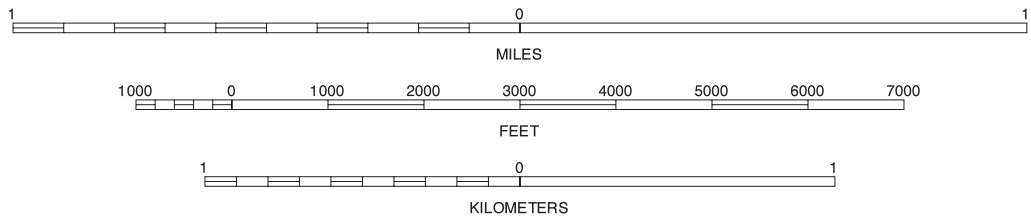
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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH

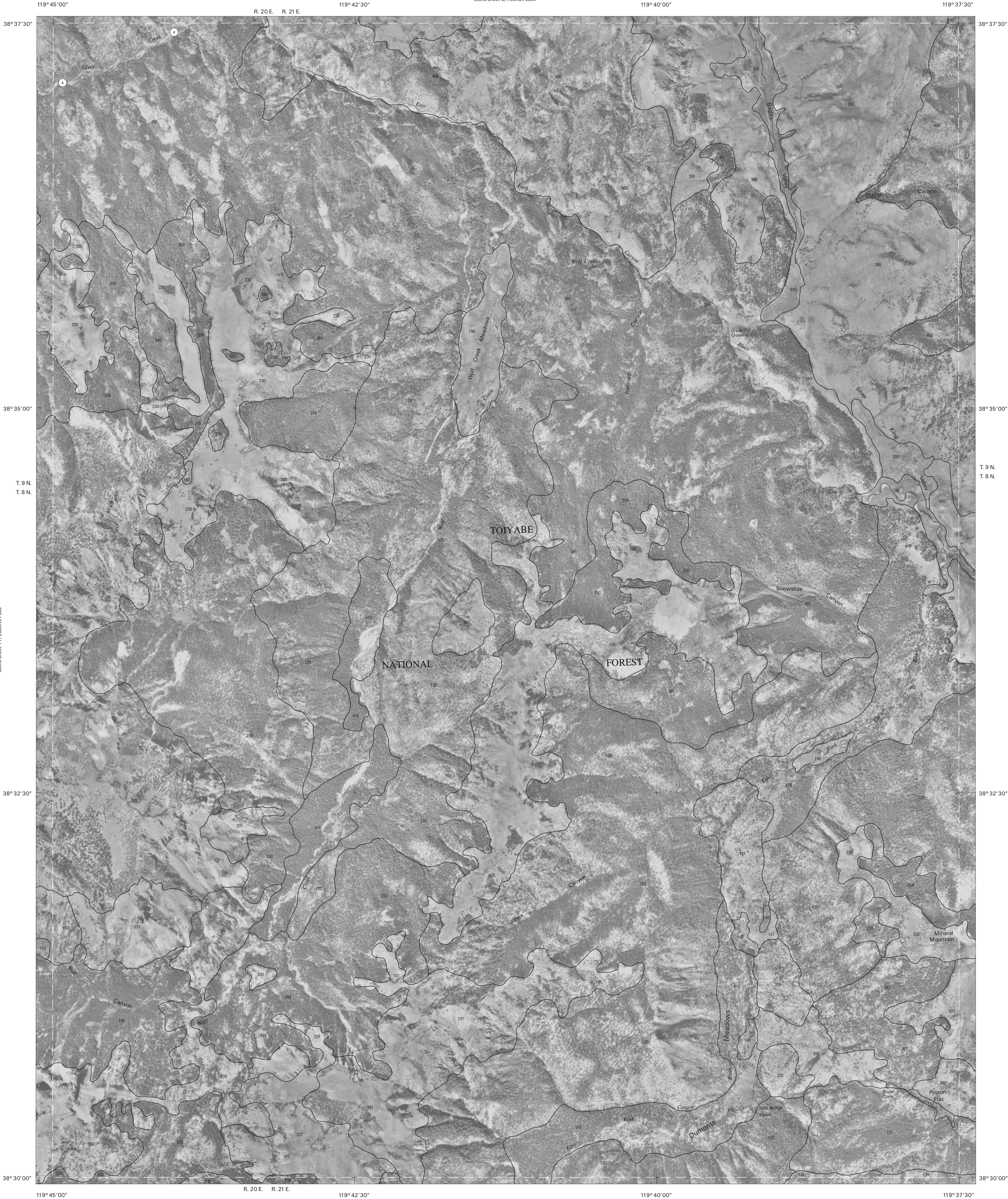


QUADRANGLE LOCATION



EBBETTS PASS, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 11 OF 36

Soil map delineations extending beyond the dashed white quadrangle neckline are for reference only and are included on adjacent map sheets.



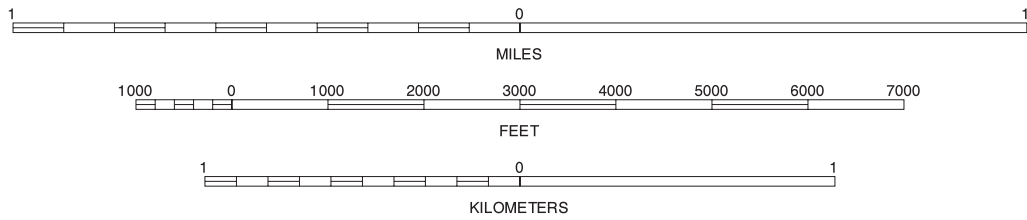
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH

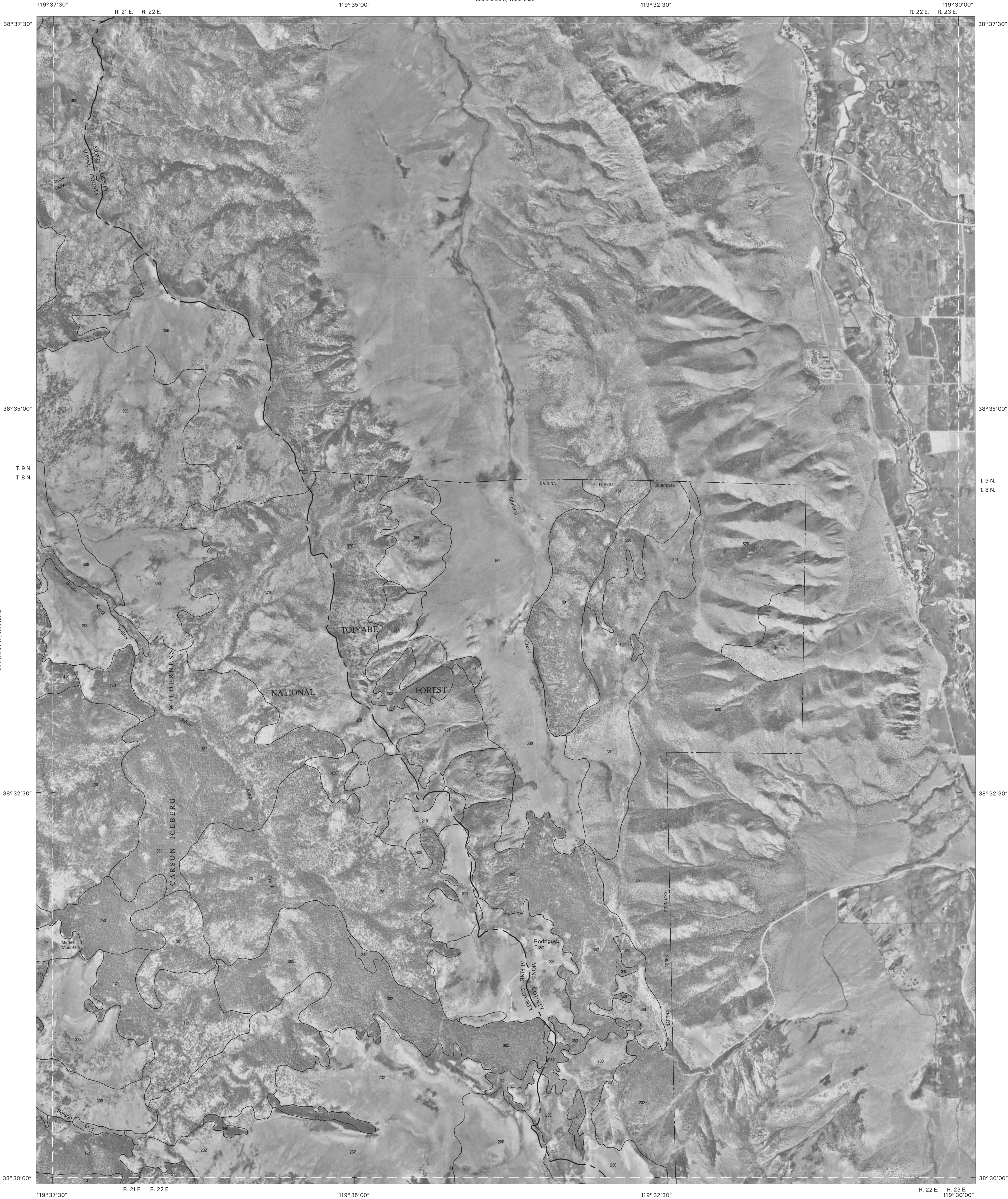


QUADRANGLE LOCATION



WOLF CREEK, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 12 OF 36

Soil map delineations extending beyond the dashed white quadrangle nealline are for reference only and are included on adjacent map sheets.



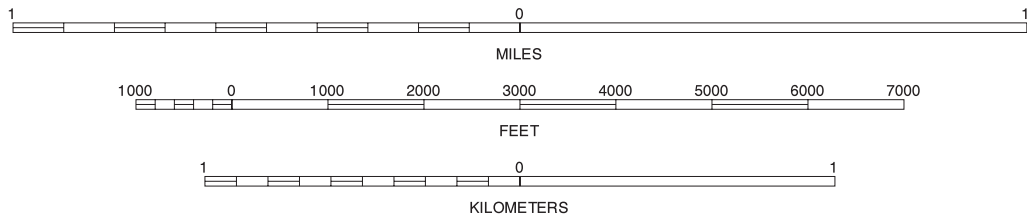
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH

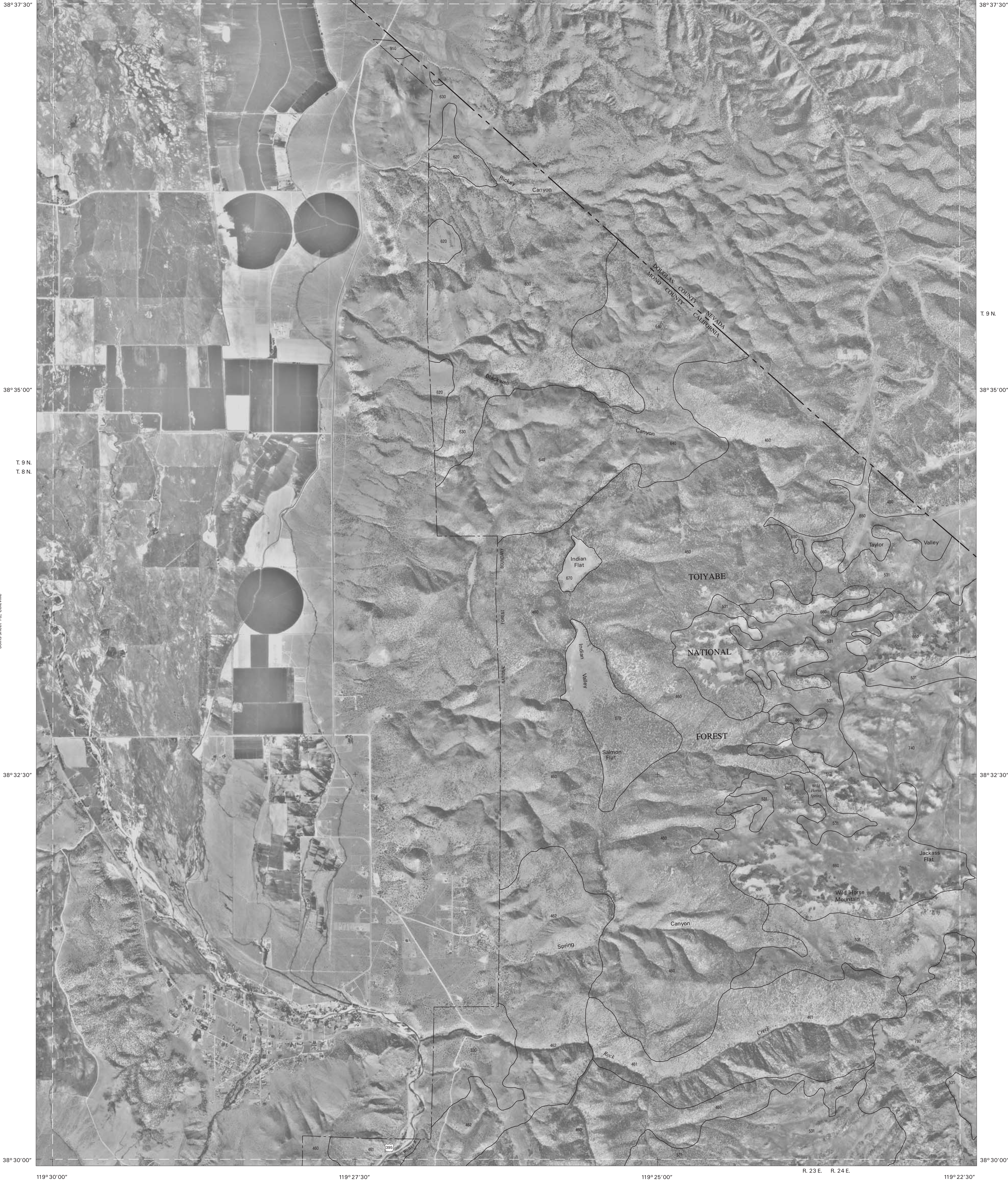


QUADRANGLE LOCATION



COLEVILLE, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 13 OF 36

Soil map delineations extending beyond the dashed white quadrangle nealline are for reference only and are included on adjacent map sheets.



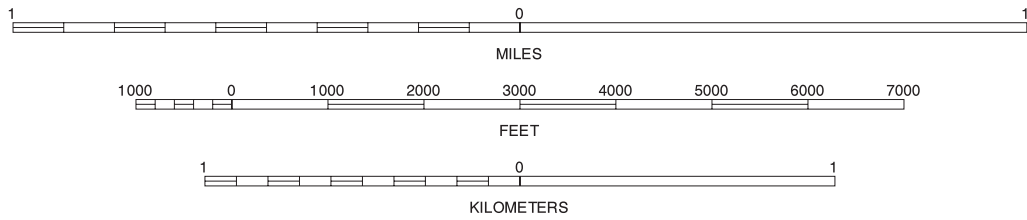
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH



QUADRANGLE LOCATION



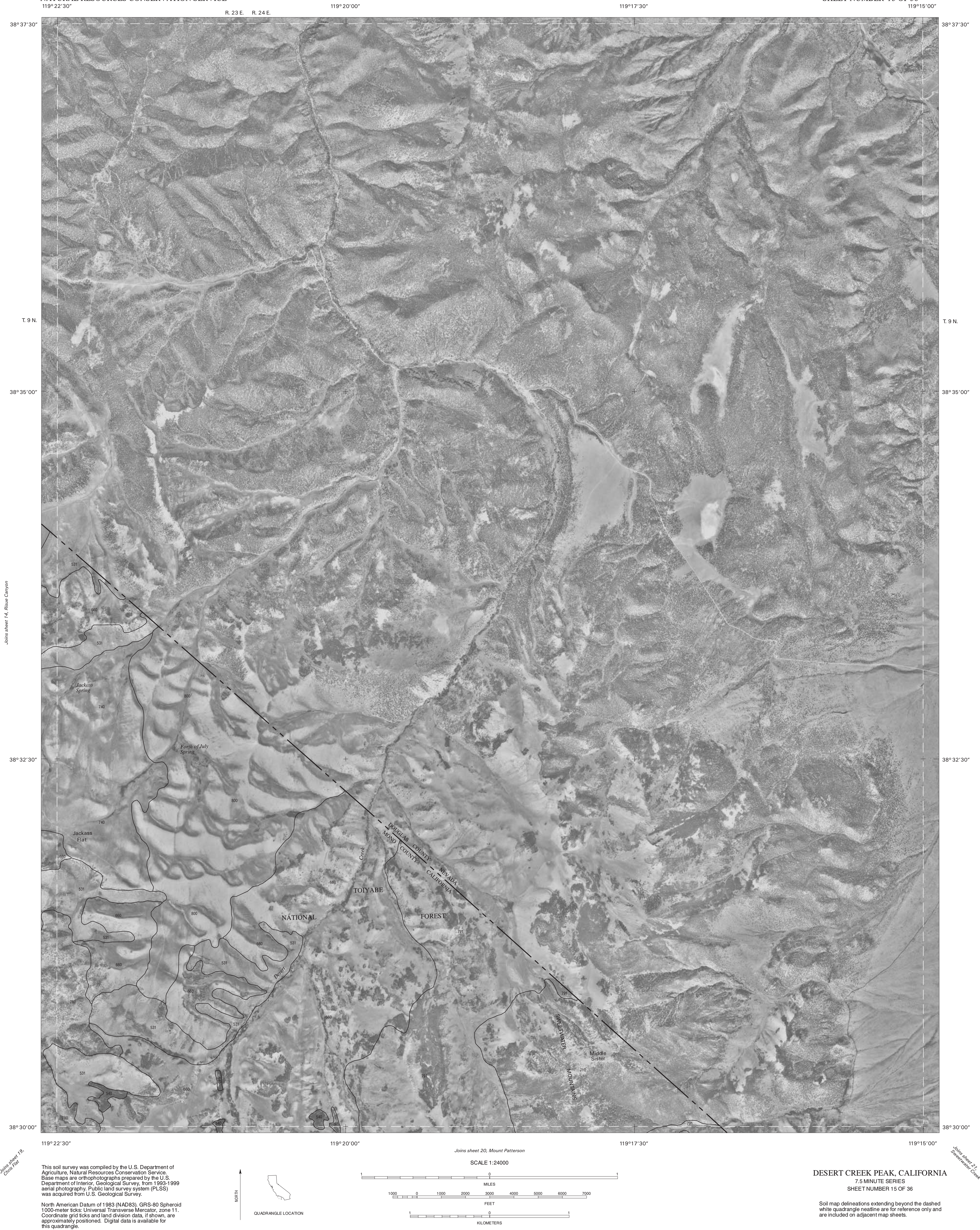
Joins sheet 19, Chris Flat

SCALE 1:24000

KILOMETERS

RISUE CANYON, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 14 OF 36

Soil map delineations extending beyond the dashed white quadrangle nealline are for reference only and are included on adjacent map sheets.



Joins sheet 10,
Pacific Valley

Joins sheet 12,
Wolf Creek

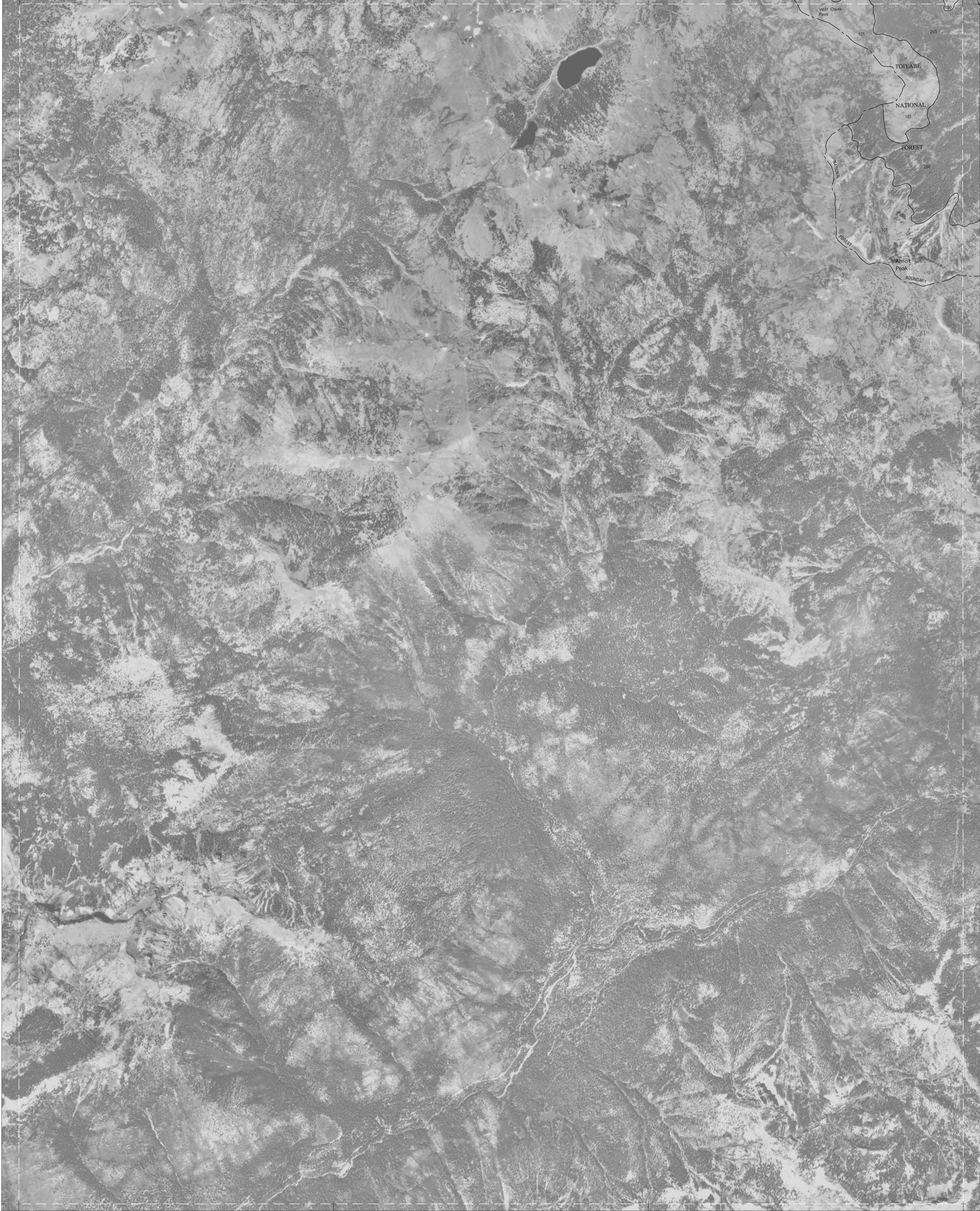
38° 30' 00"

T. 8 N.
T. 7 N.

38° 27' 30"

38° 25' 00"

38° 22' 30"



119° 52' 30"

119° 50' 00"

119° 47' 30"

119° 45' 00"

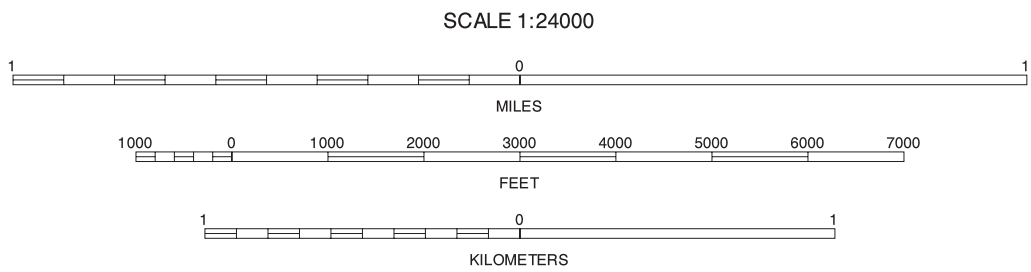
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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH



QUADRANGLE LOCATION



DARDANELLES CONE, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 16 OF 36

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 17, Dissiter Peak

Joins sheet 13,
Sonora Pass

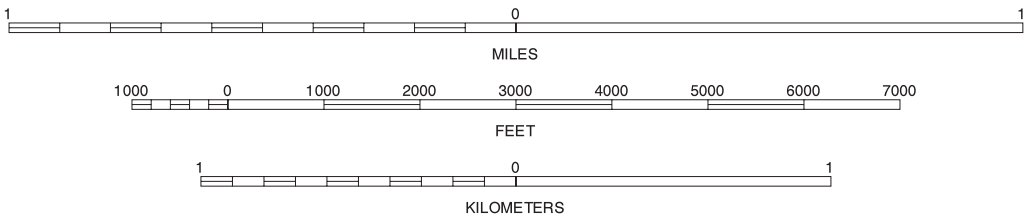


This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1983-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.



QUADRANGLE LOCATION



DISASTER PEAK, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 17 OF 36

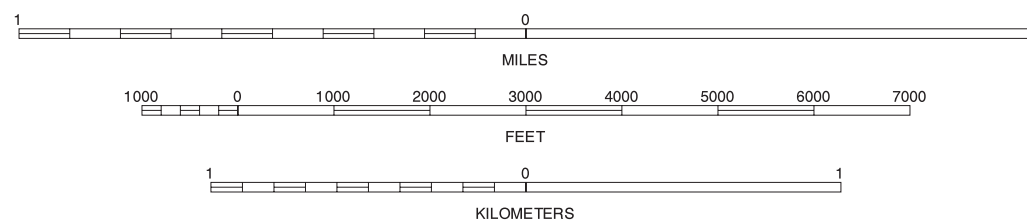
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



North American Datum of 1983 (NAD83). GRS-80 Spheroid. 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

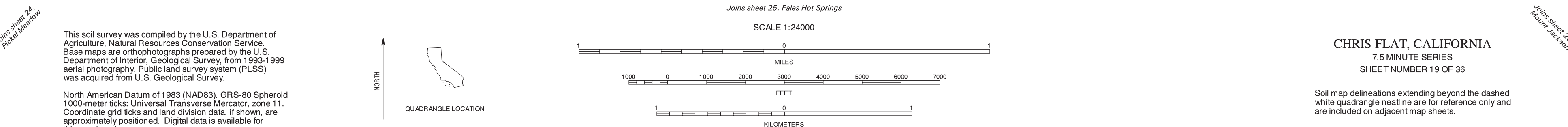


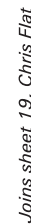
QUADRANGLE LOCATION



7.5 MINUTE SERIES
SHEET NUMBER 18 OF 36

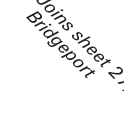
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.





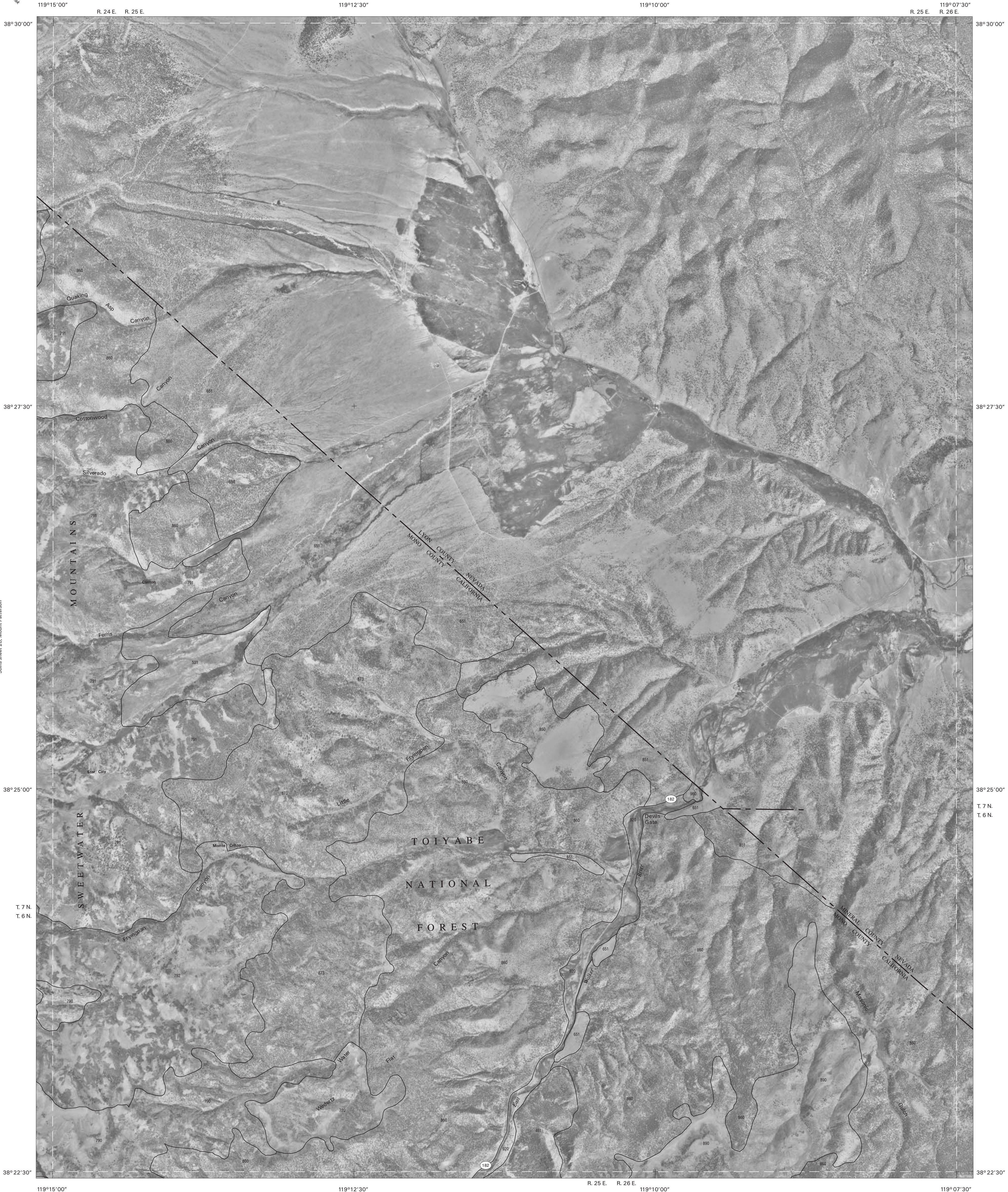
Joins sheet 25,
Fales Hot Springs

NORTH



Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 15
Desert Creek Peak



Joins sheet 20, Mount Patterson

Joins sheet 22, The Elbow

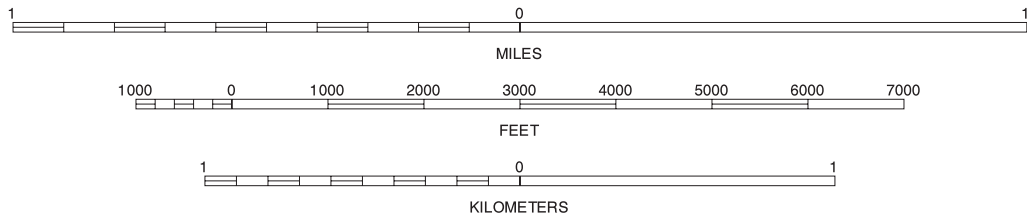
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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH



QUADRANGLE LOCATION



Joins sheet 27, Bridgeport

SCALE 1:24000

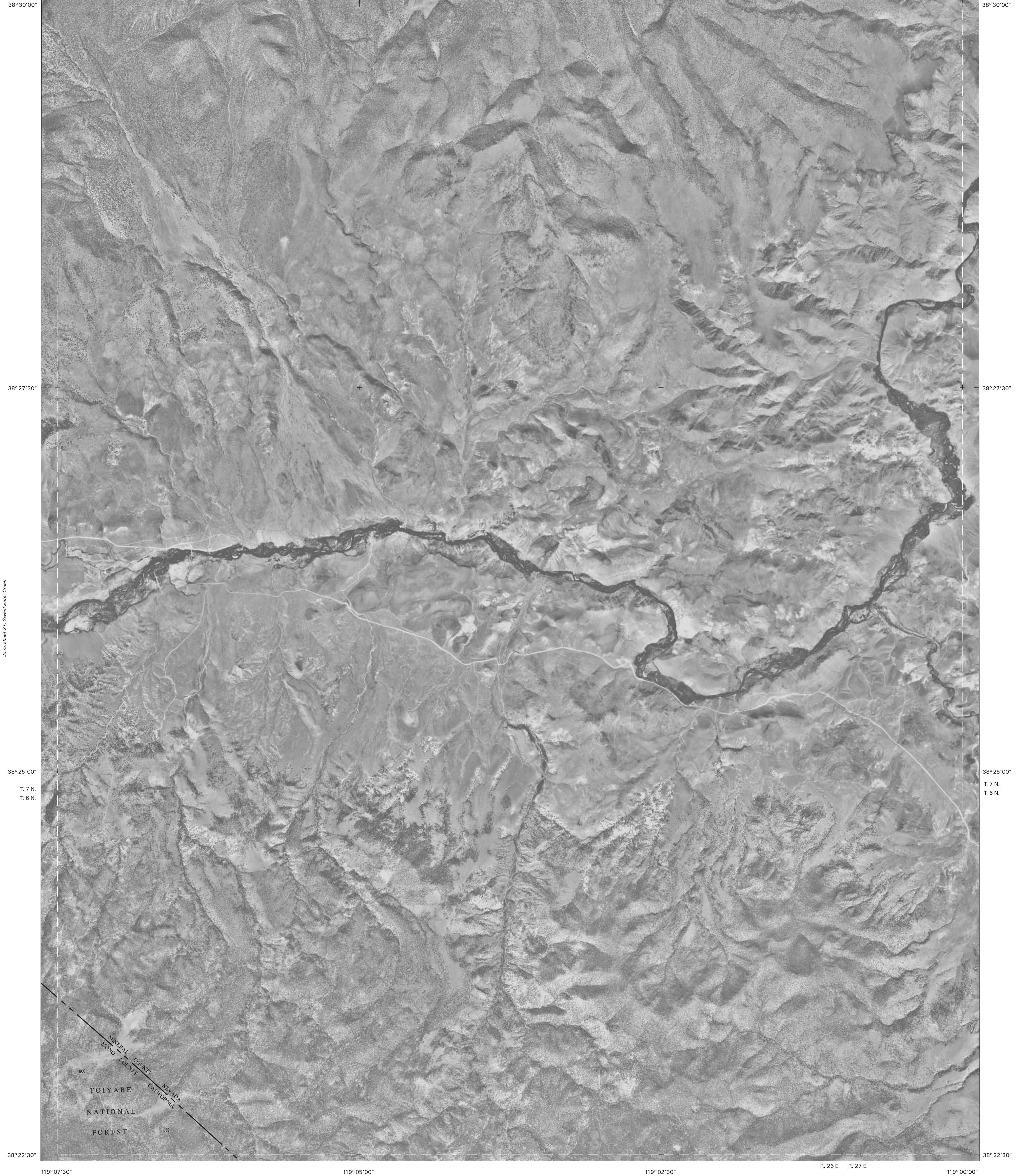
KILOMETERS

SWEETWATER CREEK, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 21 OF 36

Soil map delineations extending beyond the dashed white quadrangle nealline are for reference only and are included on adjacent map sheets.

Joins sheet 26,
Mount Jackson

Joins sheet 28,
Dante Hill



Joins sheet 21, Sweetwater Creek

Joins sheet 28, Dome Hill

Joins sheet 22, Bridgeport

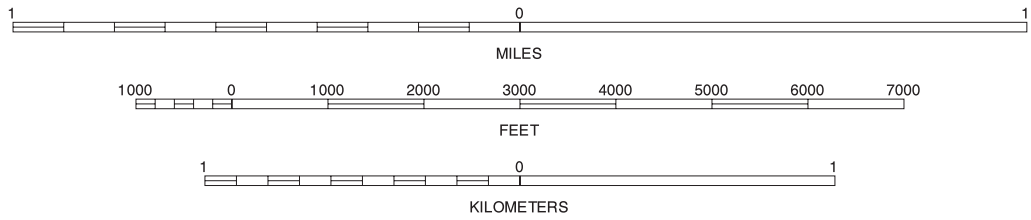
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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH



QUADRANGLE LOCATION



THE ELBOW, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 22 OF 36

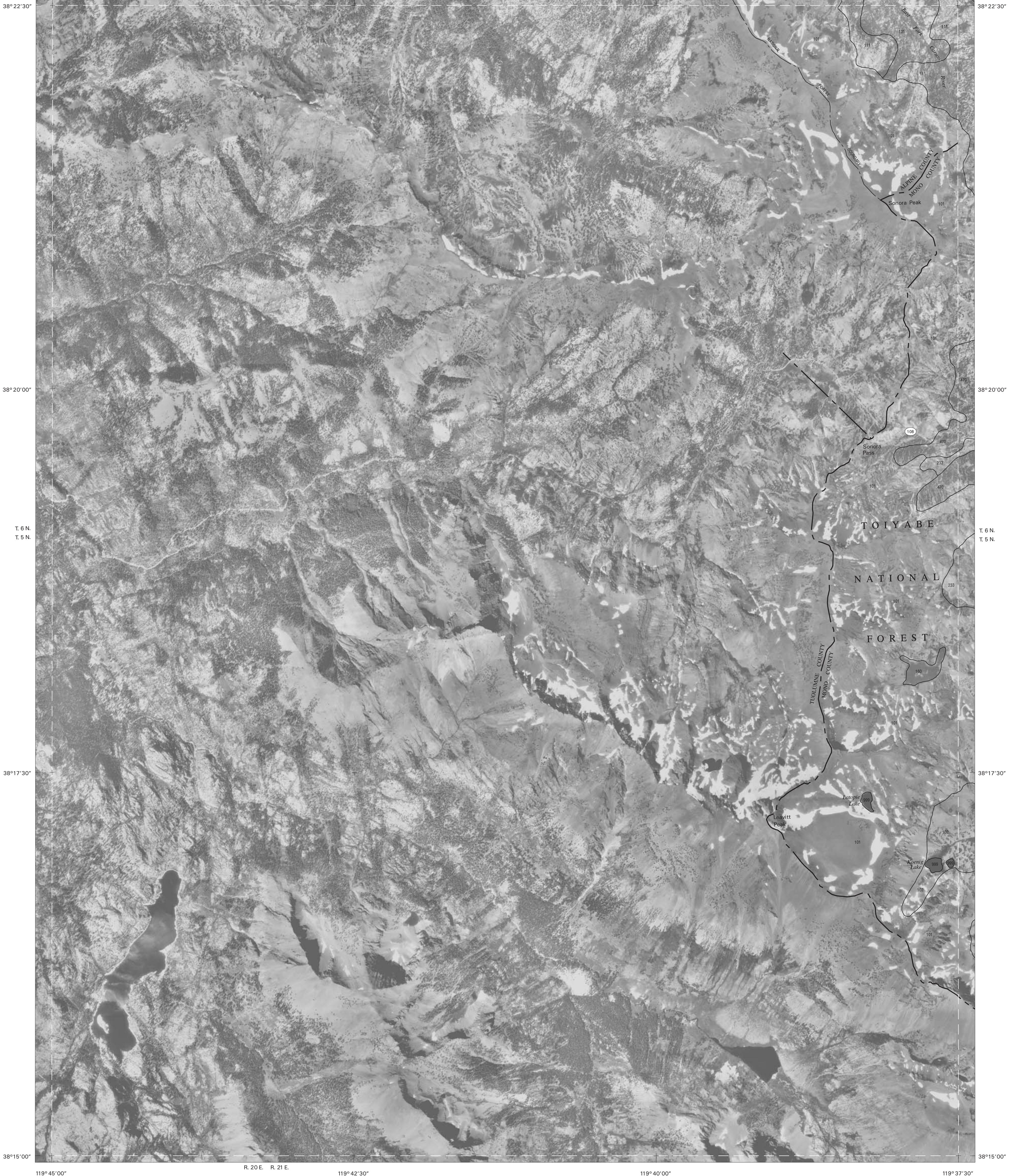
Soil map delineations extending beyond the dashed white quadrangle neckline are for reference only and are included on adjacent map sheets.

Joins sheet 16,
Disaster Peak

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

TOIYABE NATIONAL FOREST AREA, CALIFORNIA
SONORA PASS QUADRANGLE
SHEET NUMBER 23 OF 36

Joins sheet 18,
Lost Camino Peak



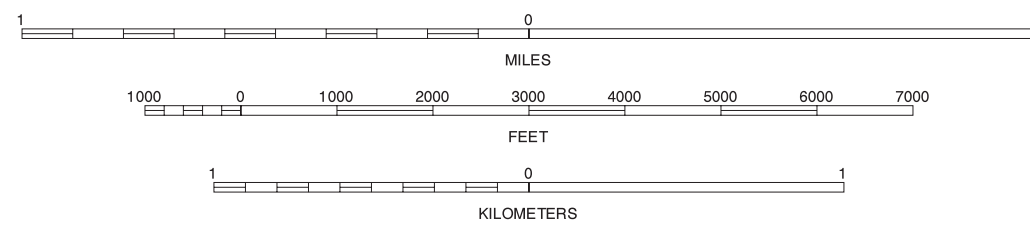
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH



QUADRANGLE LOCATION



SONORA PASS, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 23 OF 36

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 24, Picket Meadow

Joins sheet 20,
Tower Peak

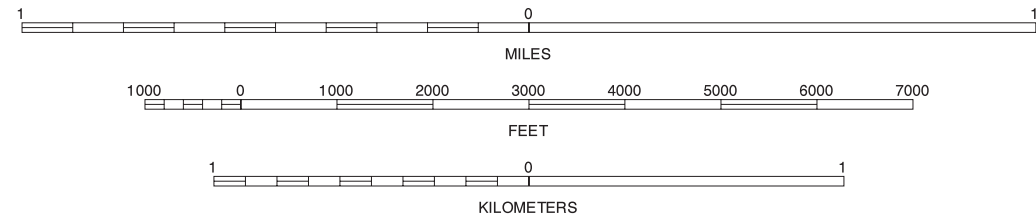


This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.



QUADRANGLE LOCATION



PICKEL MEADOW, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 24 OF 36

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 19,
East Canyon Peak

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

TOIYABE NATIONAL FOREST AREA, CALIFORNIA
FALES HOT SPRINGS QUADRANGLE
SHEET NUMBER 25 OF 36

Joins sheet 20,
Mount Patterson

Joins sheet 19, Chris Flat

R. 23 E. R. 24 E.

38°22'30"

38°22'30"

38°20'00"

38°20'00"

T. 6 N.
T. 5 N.

T. 6 N.
T. 5 N.

38°17'30"

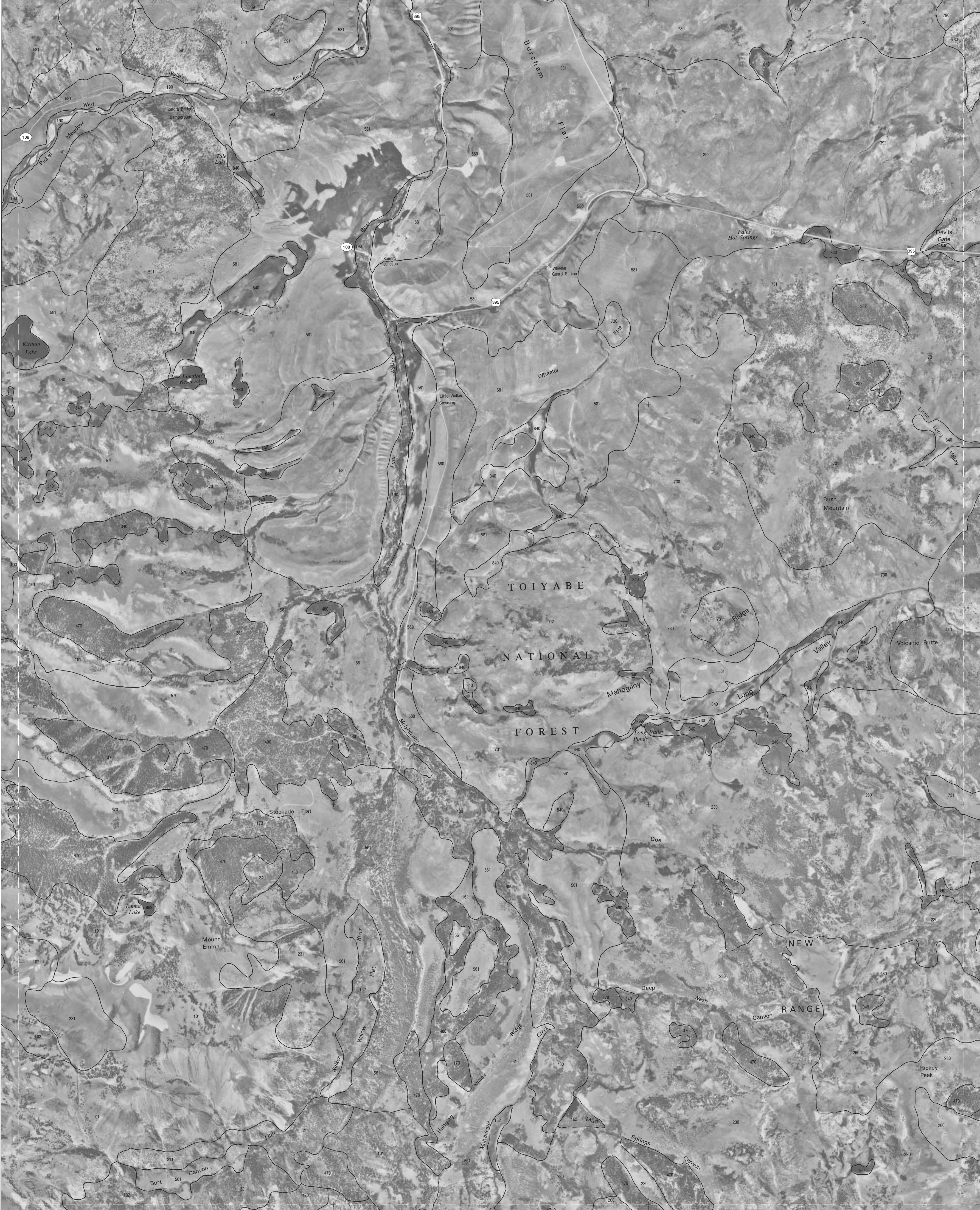
38°17'30"

T. 5 N.

T. 5 N.

38°15'00"

38°15'00"



Joins sheet 24, Pickel Meadow

Joins sheet 26, Mount Jackson

Joins sheet 20,
Tower Peak

Joins sheet 22,
Twin Lakes

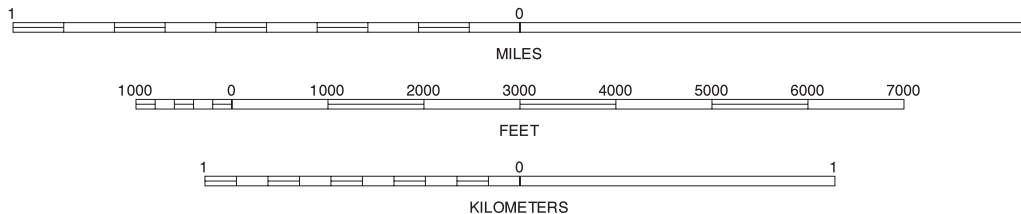
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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH



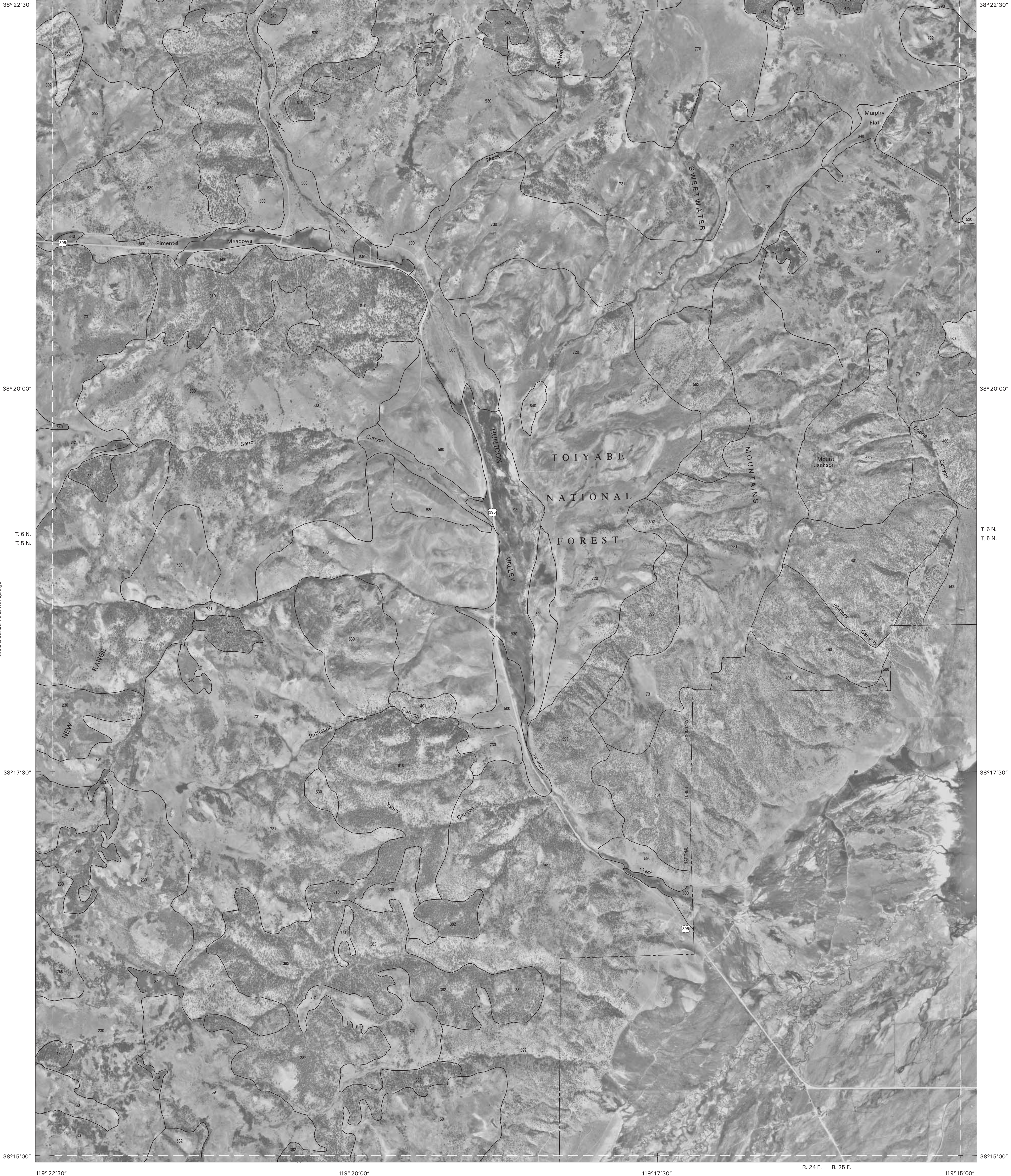
QUADRANGLE LOCATION



Joins sheet 31, Buckeye Ridge

FALES HOT SPRINGS, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 25 OF 36

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



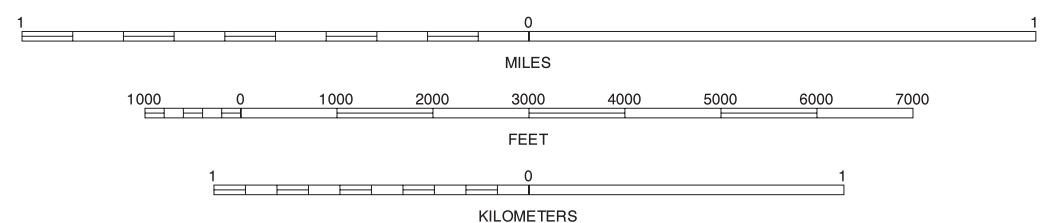
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH



QUADRANGLE LOCATION



MOUNT JACKSON, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 26 OF 36

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

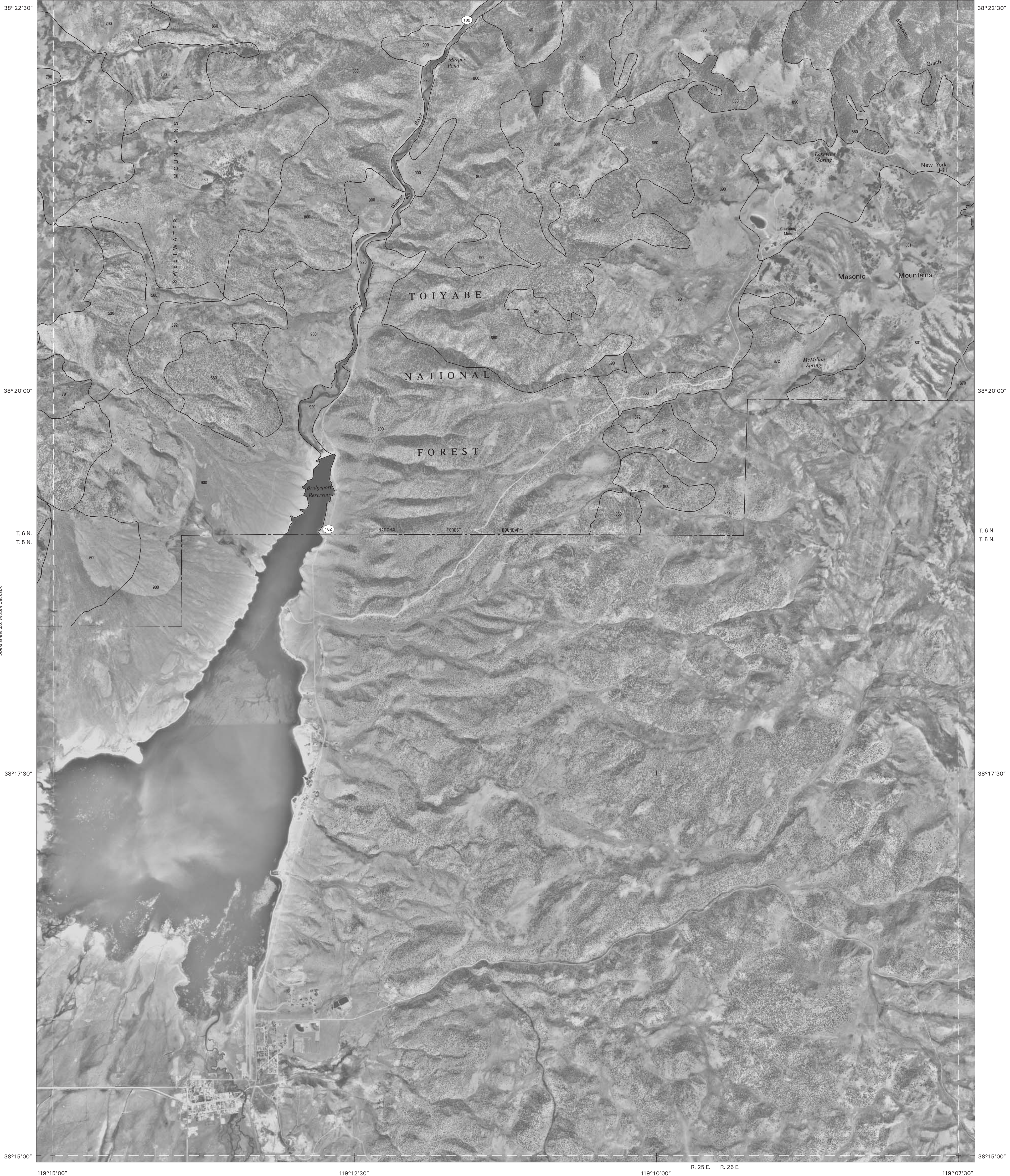
Joins sheet 20,
Mount Jackson

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
119°15'00"

TOIYABE NATIONAL FOREST AREA, CALIFORNIA
BRIDGEPORT QUADRANGLE
SHEET NUMBER 27 OF 36
119°07'30"

Joins sheet 22,
The Elbow

Joins sheet 21, Sweetwater Creek



Joins sheet 26, Mount Jackson

Joins sheet 28, Dome Hill

Joins sheet 22,
Two Lakes

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

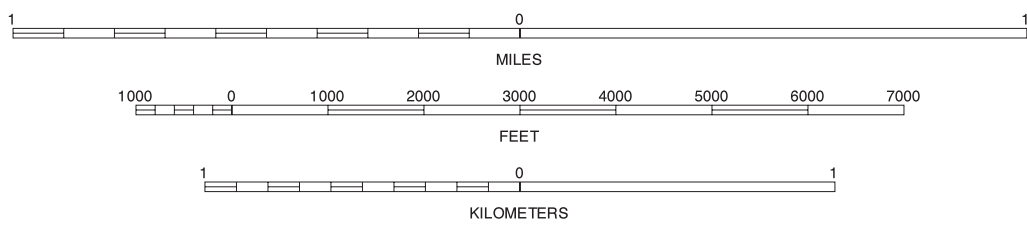
NORTH



QUADRANGLE LOCATION

Joins sheet 33, Big Alkali

SCALE 1:24000



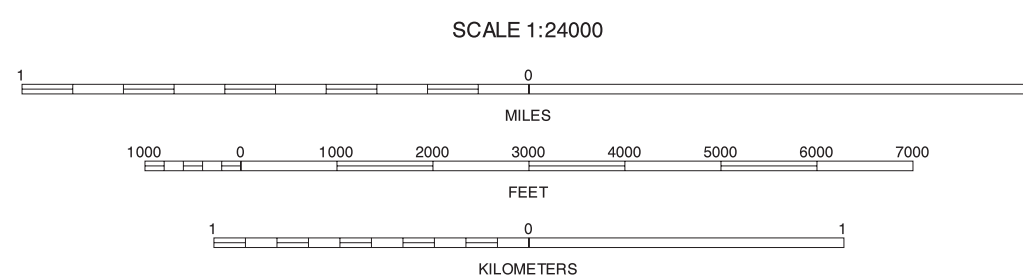
BRIDGEPORT, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 27 OF 36

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

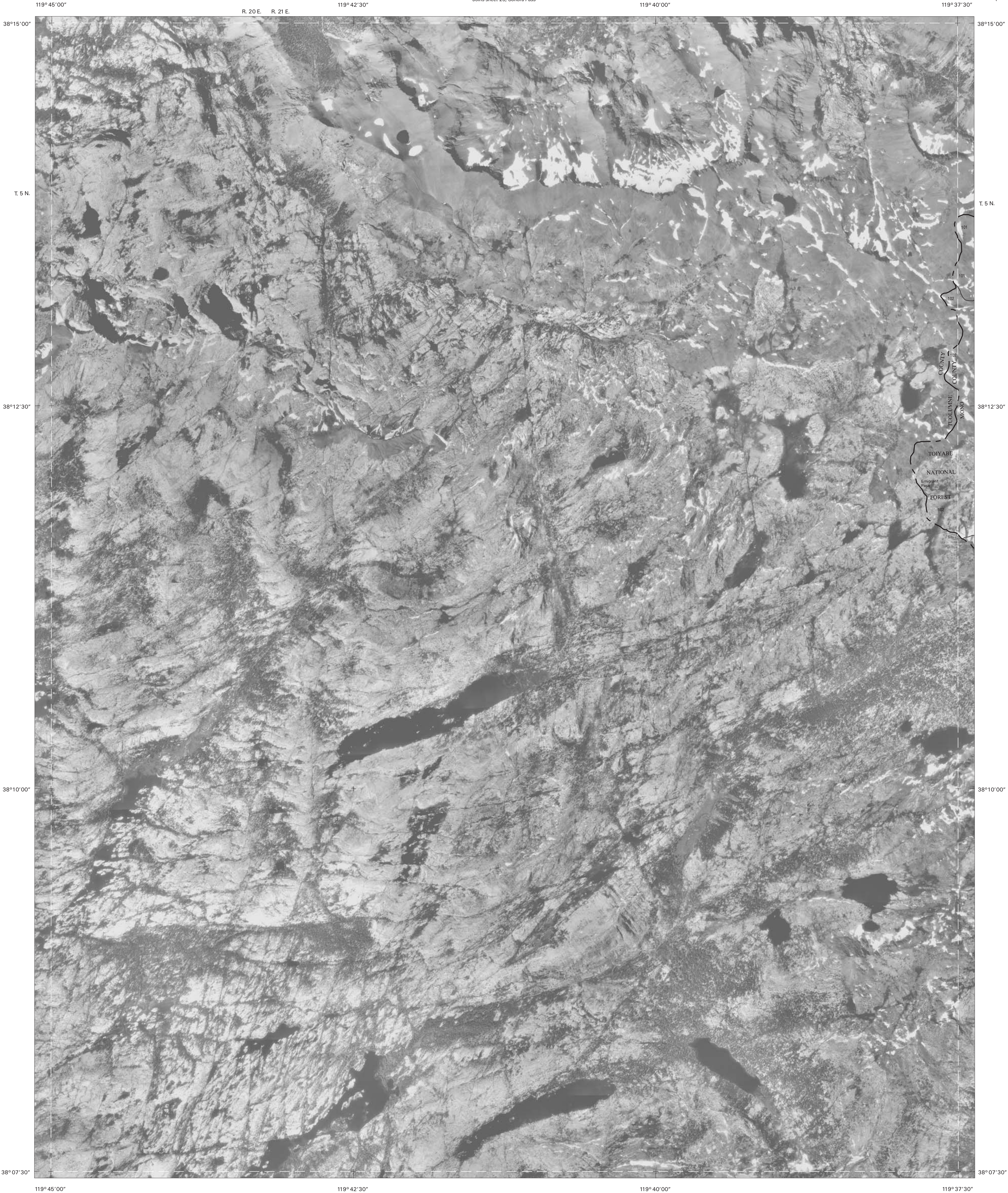


Joins sheet 33,
Big Alkali

NORTH



Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

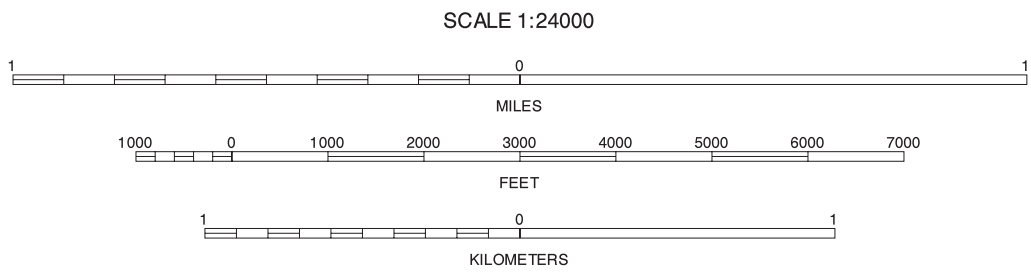


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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

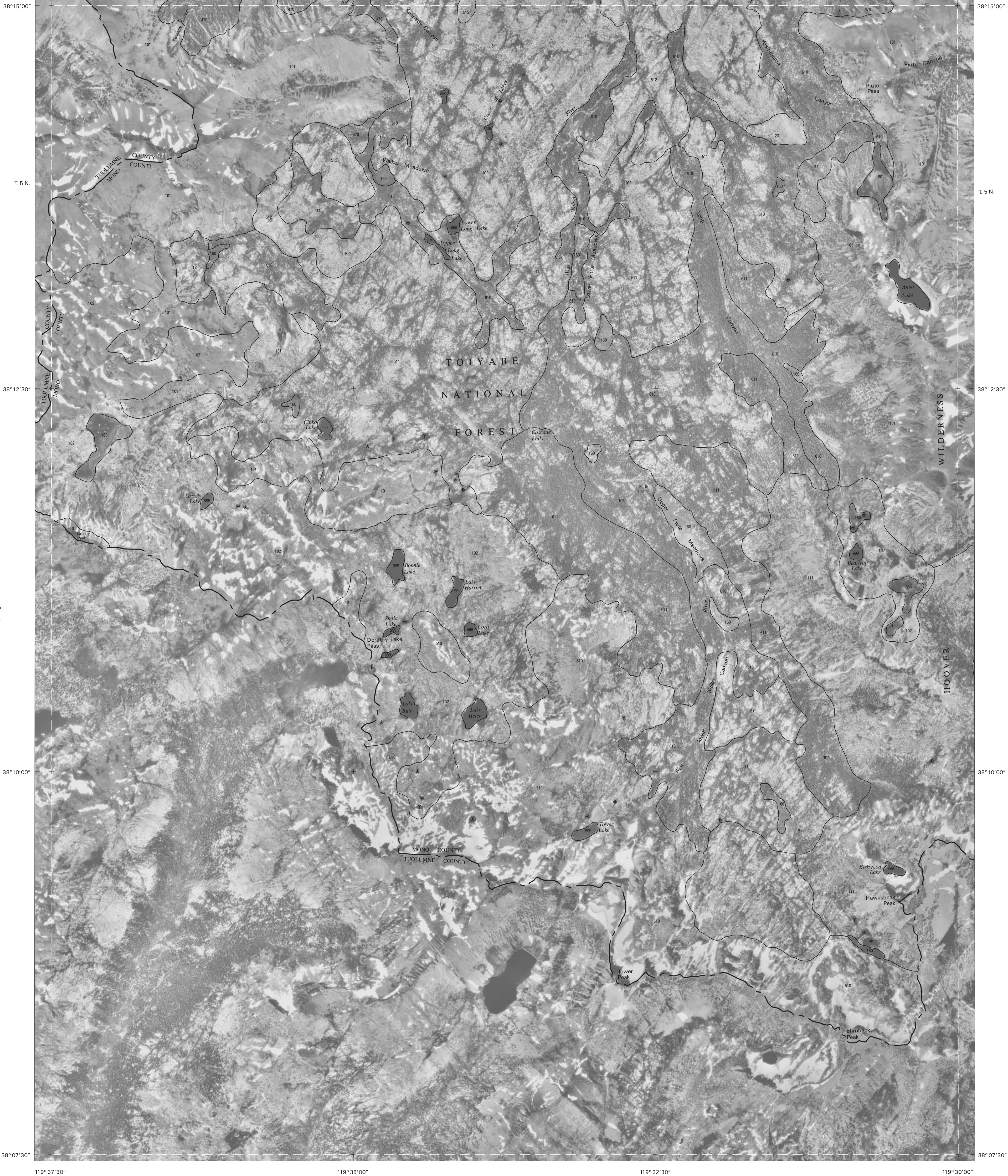


QUADRANGLE LOCATION



EMIGRANT LAKE, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 29 OF 36

Soil map delineations extending beyond the dashed white quadrangle headline are for reference only and are included on adjacent map sheets.



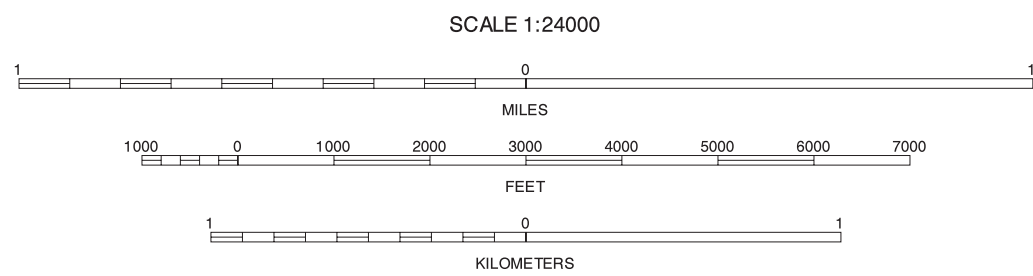
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH

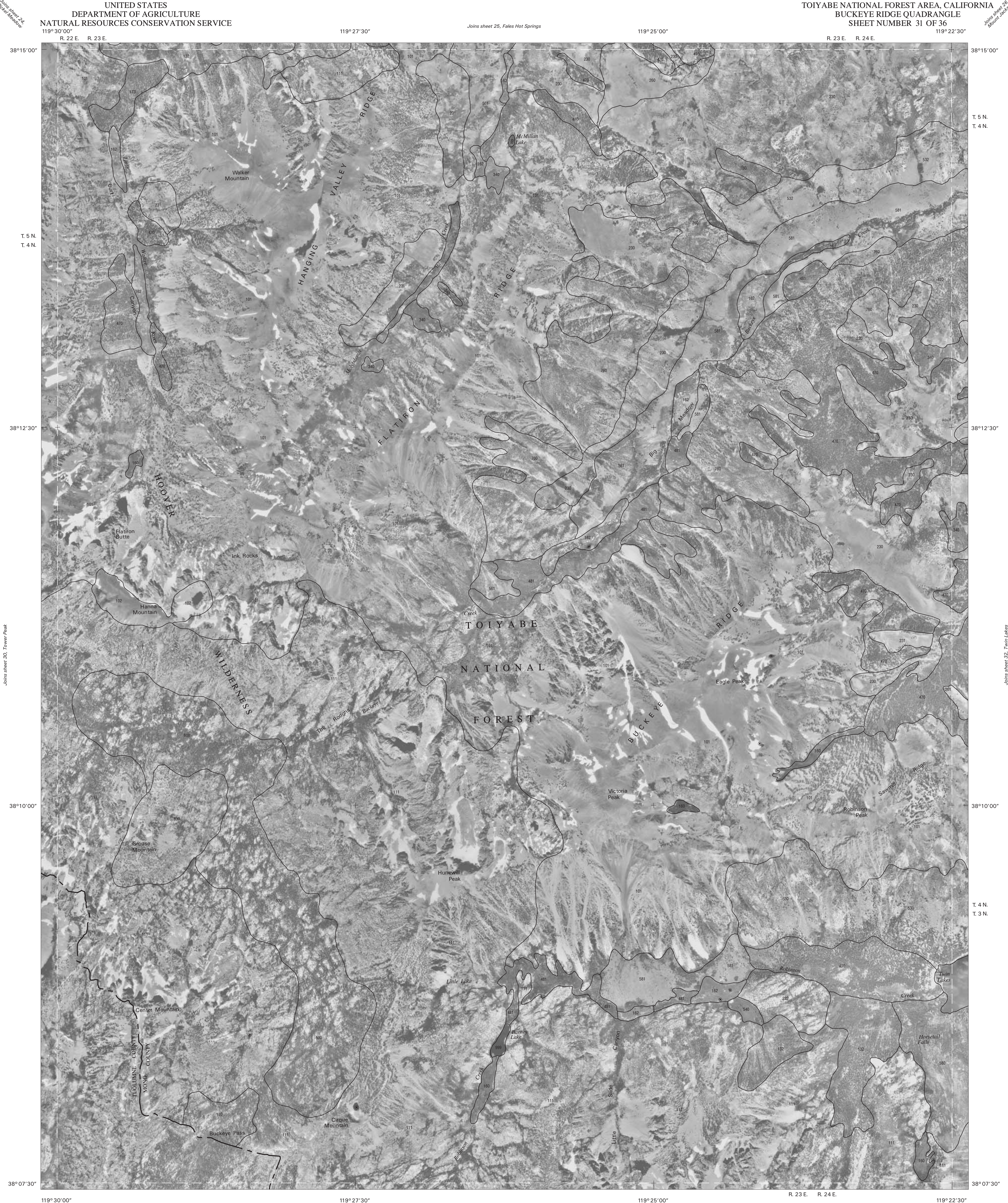


QUADRANGLE LOCATION



TOWER PEAK, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 30 OF 36

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



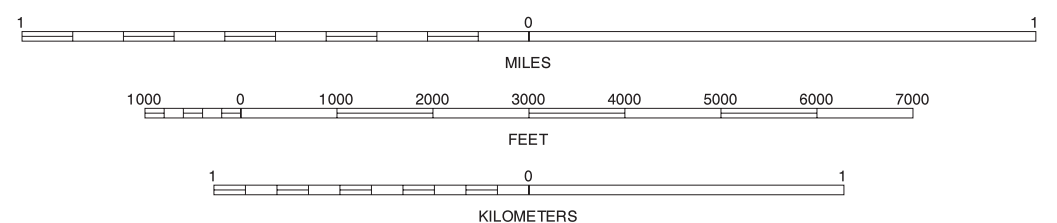
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH

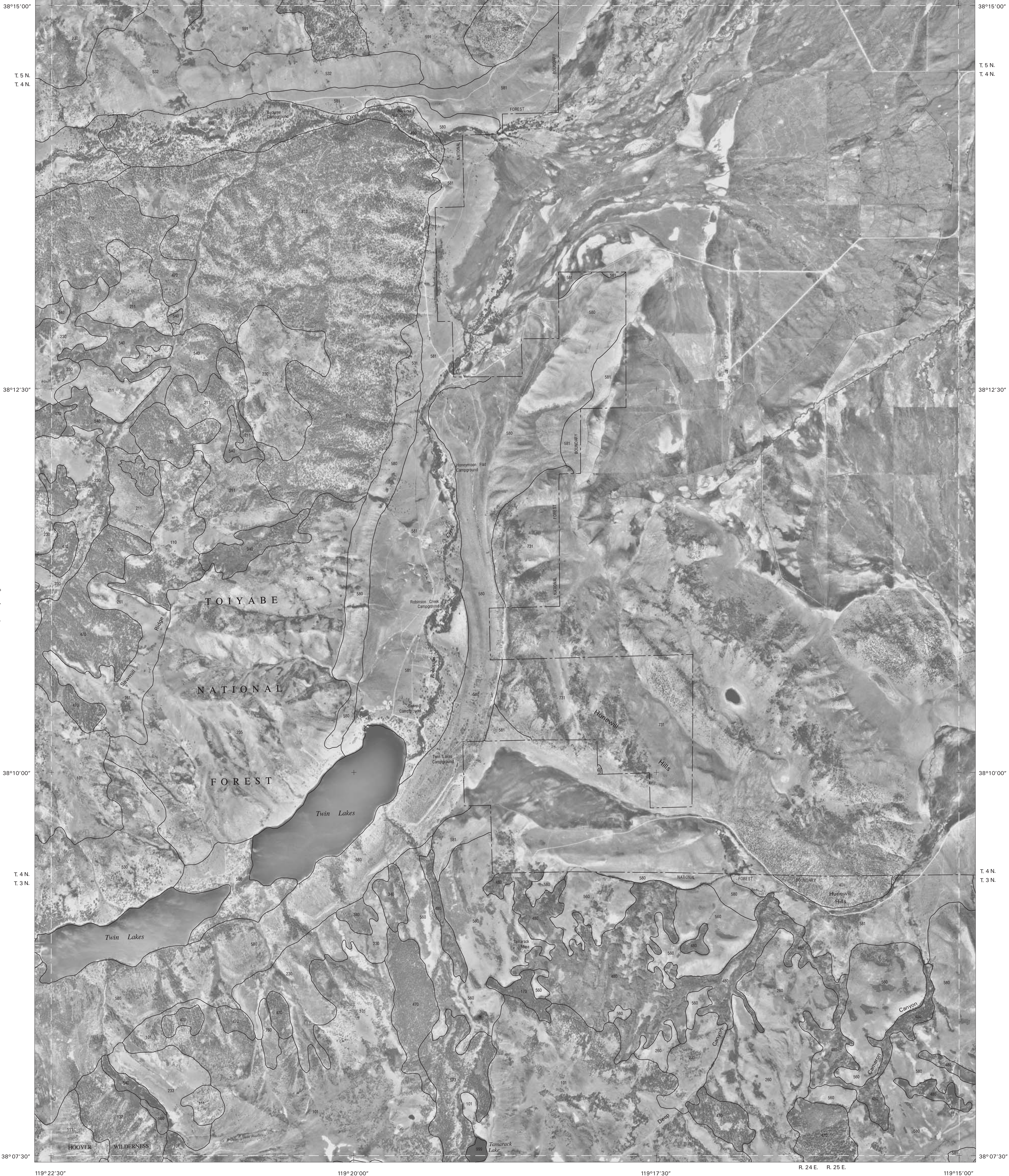


QUADRANGLE LOCATION



BUCKEYE RIDGE, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 31 OF 36

Soil map delineations extending beyond the dashed white quadrangle headline are for reference only and are included on adjacent map sheets.

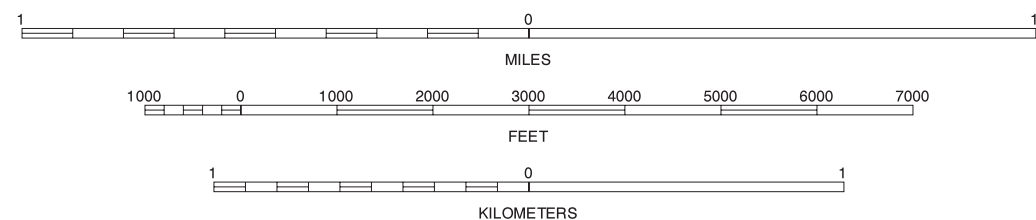


This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1953-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

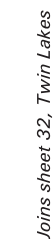


QUADRANGLE LOCATION



TWIN LAKES, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 32 OF 36

Soil map delineations extending beyond the dashed white quadrangle neeline are for reference only and are included on adjacent map sheets.

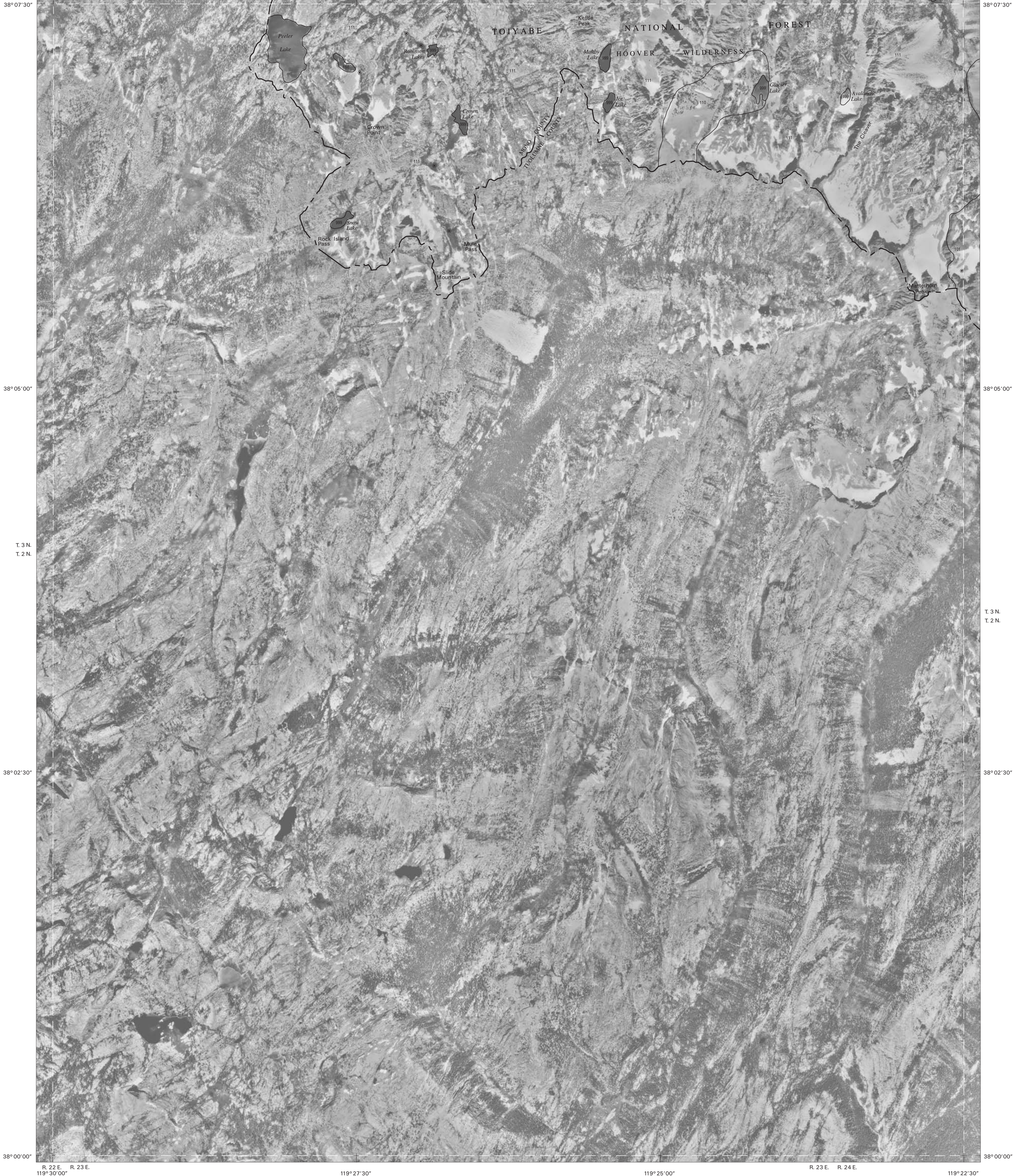


Joins sheet 35,
Dunderberg Peak

NORTH



Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



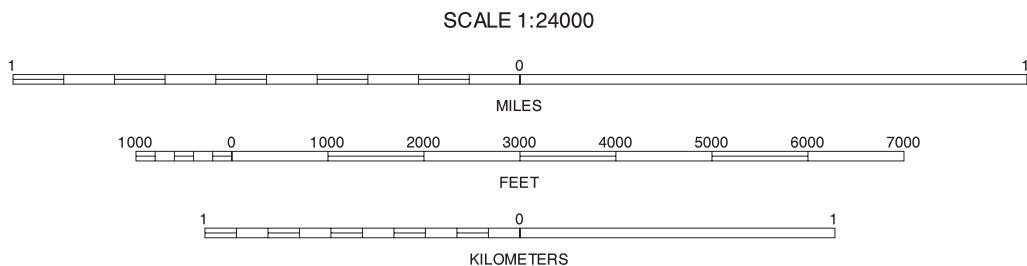
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1953-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.

NORTH

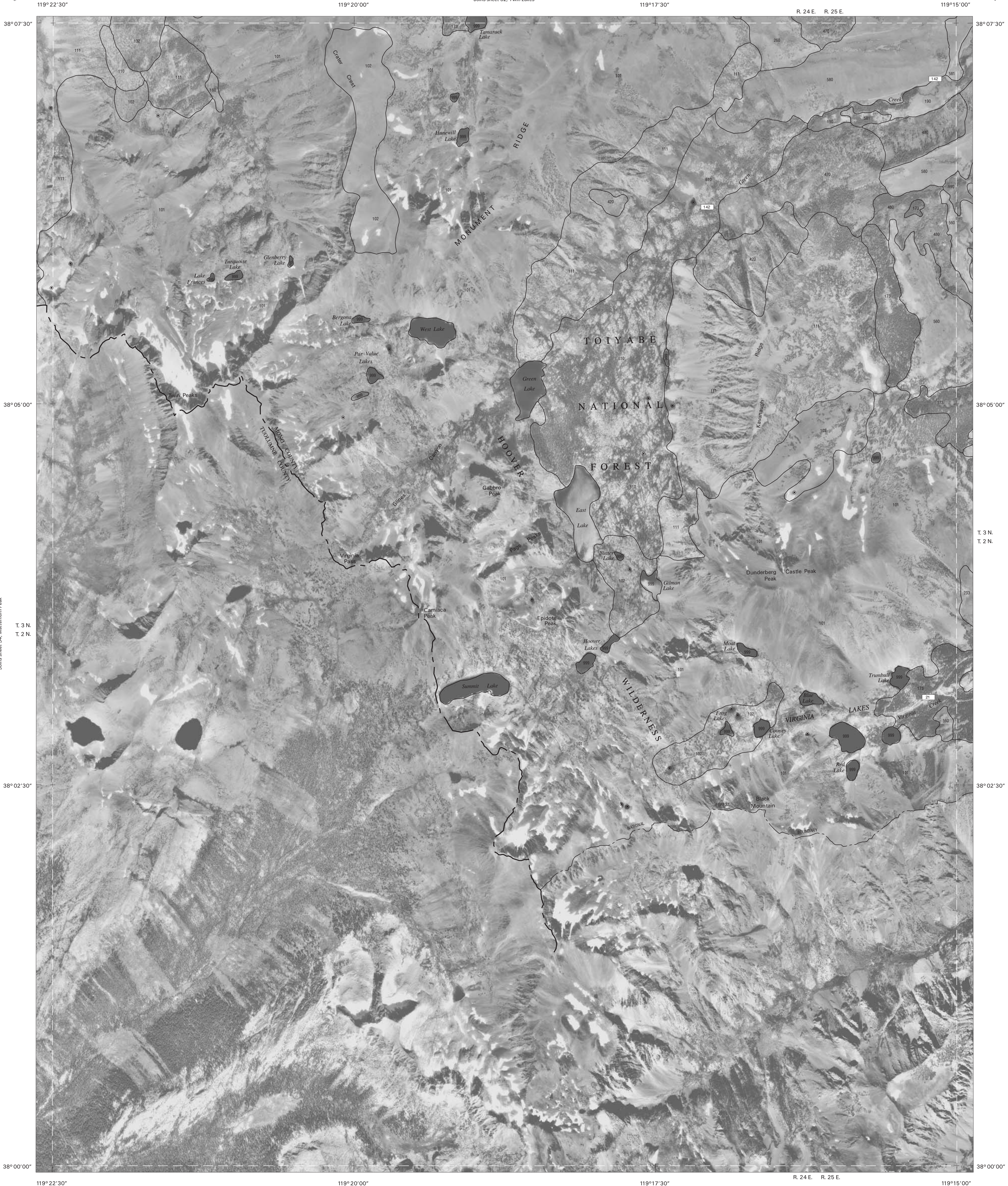


QUADRANGLE LOCATION



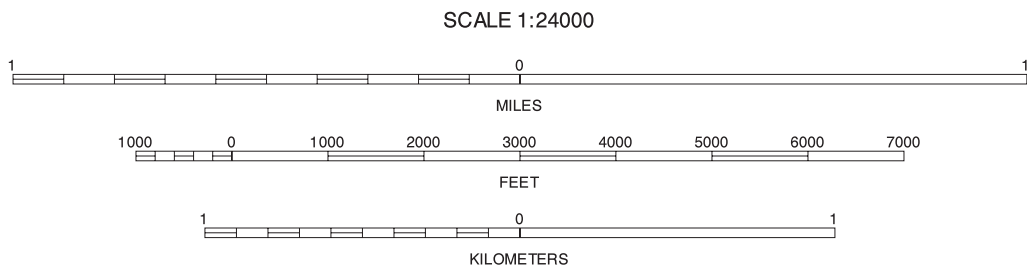
MATTERHORN PEAK, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 34 OF 36

Soil map delineations extending beyond the dashed white quadrangle heattine are for reference only and are included on adjacent map sheets.



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1953-1999 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data is available for this quadrangle.



DUNDERBERG PEAK, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 35 OF 36

Soil map delineations extending beyond the dashed white quadrangle headline are for reference only and are included on adjacent map sheets.



North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 11.
Coordinate grid ticks and land division data, if shown, are
approximately positioned. Digital data is available for
this quadrangle.



QUADRANGLE LOCATION



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